

Biological Analysis Report

NE-DIST-2018-09-13-01

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

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
9143 Philips Highway, Suite 200
Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **LSJR North Salt**
Request ID: **RQ-2018-09-10-29**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Date Certified: 18-OCT-2018 15:46



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: Deer Cr @ Tallyrand Ave

Collection Date/Time: 09/12/2018 09:20

Field ID: 20030792

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025109	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.0		ug/L	P352166	
		Phaeophytin-a	1.7		ug/L	P352166	
		Chlorophyll-a, Uncorrected	5.1		ug/L	P352166	
2025112	ASTM D650399	ENTEROCOCCI-ENTEROLERT	240		MPN/100 mL		
2025115	SOP-PCR-1.0	HF183-qPCR**	3.65E+04		GEU/100 mL	P352338	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Moncrief Cr Lem Turner Rd Br/Norwood Ave

Collection Date/Time: 09/12/2018 09:55

Field ID: 20030114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025110	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14		ug/L	P352166	
		Phaeophytin-a	4.3		ug/L	P352166	
		Chlorophyll-a, Uncorrected	17		ug/L	P352166	
2025113	ASTM D650399	ENTEROCOCCI-ENTEROLERT	280		MPN/100 mL		
2025116	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P352338	
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	U	TSC/100 mL	P352338	
	SOP-PCR-1.3	GFD-purified-qPCR**	1.80E+03		TSC/100 mL	P352926	MS
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P352338	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:
SOP-PCR-1.2: Precision data unavailable due for Analysis Batch A86969
SOP-PCR-1.4: Precision data unavailable for Analysis Batch A86946

Sample Location: Ribault River @ US 1

Collection Date/Time: 09/12/2018 11:00

Field ID: 20030133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025111	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.6		ug/L	P352166	
		Phaeophytin-a	1.8		ug/L	P352166	
		Chlorophyll-a, Uncorrected	7.9		ug/L	P352166	
2025114	ASTM D650399	ENTEROCOCCI-ENTEROLERT	510		MPN/100 mL		

Sample Location: Ribault River at Harbor View Boat Ramp

Collection Date/Time: 09/12/2018 10:35

Field ID: G2NE1161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028188	ASTM D650399	ENTEROCOCCI-ENTEROLERT	170		MPN/100 mL		

Sample Location: Ribault River at Harbor View Boat Ramp

Collection Date/Time: 09/12/2018 10:40

Field ID: G2NE1161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028189	ASTM D650399	ENTEROCOCCI-ENTEROLERT	180		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P352166

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: P352338

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

Reference Method: SOP-PCR-1.2
Batch ID: P352338

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

Reference Method: SOP-PCR-1.3
Batch ID: P352926

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

Reference Method: SOP-PCR-1.4
Batch ID: P352338

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P352166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.5		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P352338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	99.0	124	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P352338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	103	124	P/P	50 - 300

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P352926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	116	62.6	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P352338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	97.6	108	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P352338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021221	HF183-qPCR	89.7		P	50 - 175
2022139	HF183-qPCR	93.8		P	50 - 175
2025115	HF183-qPCR	97.6		P	50 - 175
2025116	HF183-qPCR	93.8		P	50 - 175
2025192	HF183-qPCR	94.9		P	50 - 175
2025197	HF183-qPCR	99.9		P	50 - 175
2025925	HF183-qPCR	88.9		P	50 - 175
2026344	HF183-qPCR	86.8		P	50 - 175
2028907	HF183-qPCR	88.0		P	50 - 175
2028908	HF183-qPCR	81.6	85.1	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P352338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021221	GULL2-qPCR	145		P	50 - 300
2025116	GULL2-qPCR	97.8		P	50 - 300
2025192	GULL2-qPCR	104		P	50 - 300
2025925	GULL2-qPCR	108		P	50 - 300
2026344	GULL2-qPCR	93.3		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P352926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021221	GFD-purified-qPCR	94.3		P	50 - 175
2021428	GFD-purified-qPCR	76.4	62.9	P/P	50 - 175
2021429	GFD-purified-qPCR	71.7		P	50 - 175
2025116	GFD-purified-qPCR	53.0		P	50 - 175
2025192	GFD-purified-qPCR	98.8		P	50 - 175
2025198	GFD-purified-qPCR	88.3		P	50 - 175
2025925	GFD-purified-qPCR	98.1		P	50 - 175
2026344	GFD-purified-qPCR	92.3		P	50 - 175
2028725	GFD-purified-qPCR	191		F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
 Batch ID: P352338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021221	BacR-qPCR	84.7		P	50 - 175
2025116	BacR-qPCR	92.7		P	50 - 175
2025192	BacR-qPCR	92.0		P	50 - 175
2025925	BacR-qPCR	96.0		P	50 - 175
2026344	BacR-qPCR	86.0		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P352166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025054	Chlorophyll-a, Corrected	2.80	Sample	P	0 - 25
2025054	Chlorophyll-a, Uncorrected	2.65	Sample	P	0 - 25
2025054	Phaeophytin-a	1.41	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P352338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028908	HF183-qPCR	4.17	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P352926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021428	GFD-purified-qPCR	19.2	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: 2025115
 Field Sample ID: 20030792

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	110	P	50 - 300

Lab Sample ID: 2025116
 Field Sample ID: 20030114

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	88.9	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	130	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	111	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	87.5						2.80	
	Chlorophyll-a, Uncorrected							2.65	
	Phaeophytin-a							1.41	
SOP-PCR-1.0	HF183-qPCR	124	99.0	88.9	86.8	88.0			4.17
SOP-PCR-1.2	GULL2-qPCR	124	103	108	93.3	145			
SOP-PCR-1.3	GFD-purified-qPCR	62.6	116	94.3	53.0	98.8			19.2
SOP-PCR-1.4	BacR-qPCR	108	97.6	96.0	86.0	84.7			
				81.6					
				97.8					
				98.1					
				92.7					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D650399 / E82502	Enterococci by Enterolert Quanti-Tray Method by ALS Environmental Laboratory in Jacksonville	2025112, 2025113, 2025114, 2028188, 2028189
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2025109, 2025110, 2025111
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2025115, 2025116
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2025116
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2025116
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2025116
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2025115, 2025116

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	09/12/2018	09/12/2018 15:32		09/13/2018 16:04	ALS Environmental, Jax	2025112, 2025113, 2025114, 2028188, 2028189
SM 10200 H (mod.)	09/13/2018	09/13/2018 14:30	Mariam Hanna	09/21/2018 16:40	Carina A. Tull	2025109, 2025110, 2025111
SOP-PCR-1.0	09/13/2018	09/13/2018 15:30	Sarah Menz	10/04/2018 14:55	Mailin Lopez	2025115, 2025116
SOP-PCR-1.2	09/13/2018	09/13/2018 15:30	Sarah Menz	10/08/2018 08:46	Mailin Lopez	2025116
SOP-PCR-1.3	09/13/2018	09/13/2018 15:30	Sarah Menz	10/16/2018 11:23	Sarah Menz	2025116
SOP-PCR-1.4	09/13/2018	09/13/2018 15:30	Sarah Menz	10/05/2018 12:23	Mailin Lopez	2025116
SOP-PCR-4.0	09/13/2018	09/13/2018 15:30	Angela Smith	10/03/2018 11:43	Sarah Menz	2025115, 2025116