

Biological Analysis Report

NE-DIST-2018-01-18-02

Florida Department of Environmental Protection
Central Laboratory
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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 coast**
Request ID: **RQ-2018-01-22-11**
Customer: **NE-DIST**
Project ID: **SMP**

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FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Jennifer Walters, Environmental Manager

Date Certified: 28-FEB-2018 13:02

A handwritten signature in black ink, appearing to read "J Walters", is positioned below the printed name and title of the certifier.

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: Hopkins Creek @ Kings Rd

Collection Date/Time: 01/17/2018 14:05

Field ID: 20030758

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960183	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	I	ug/L	P338815	
		Phaeophytin-a	1.3		ug/L	P338815	
		Chlorophyll-a, Uncorrected	2.5		ug/L	P338815	
1960204	ASTM D650399	ENTEROCOCCI-ENTEROLERT	440		MPN/100 mL		
1960208	SOP-PCR-1.0	HF183-qPCR**	1.27E+03		GEU/100 mL	P338707	
	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.

Sample Location: Hopkins Creek @ Florida Blvd

Collection Date/Time: 01/17/2018 13:25

Field ID: 20030698

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960206	ASTM D650399	ENTEROCOCCI-ENTEROLERT	750		MPN/100 mL		
1960210	SOP-PCR-1.0	HF183-qPCR**	1.04E+03		GEU/100 mL	P338707	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Hopkins Creek @ Penman Rd

Collection Date/Time: 01/17/2018 12:55

Field ID: G2NE1157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960207	ASTM D650399	ENTEROCOCCI-ENTEROLERT	170		MPN/100 mL		
1960211	SOP-PCR-1.0	HF183-qPCR**	1.94E+03		GEU/100 mL	P339080	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Open Creek @ San Pablo Rd

Collection Date/Time: 01/17/2018 11:55

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960184	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P338815	
		Phaeophytin-a	0.65	I	ug/L	P338815	
		Chlorophyll-a, Uncorrected	1.8		ug/L	P338815	
1960205	ASTM D650399	ENTEROCOCCI-ENTEROLERT	340		MPN/100 mL		
1960209	SOP-PCR-1.0	HF183-qPCR**	200	I	GEU/100 mL	P338707	
	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.

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P338815

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P338815

Component	Result	Code	Units
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P338707

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

Reference Method: SOP-PCR-1.0
Batch ID: P339080

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: P338815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.6		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	122	114	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P339080

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	112	87.7	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958064	HF183-qPCR	108		P	50 - 175
1958092	HF183-qPCR	94.3		P	50 - 175
1958093	HF183-qPCR	86.7		P	50 - 175
1958094	HF183-qPCR	96.8		P	50 - 175
1958503	HF183-qPCR	83.7		P	50 - 175
1958586	HF183-qPCR	60.1		P	50 - 175
1960208	HF183-qPCR	92.9		P	50 - 175
1960209	HF183-qPCR	83.9		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960210	HF183-qPCR	84.2		P	50 - 175
1961509	HF183-qPCR	93.7		P	50 - 175
1962140	HF183-qPCR	89.4	92.6	P/P	50 - 175
1963376	HF183-qPCR	97.2		P	50 - 175
1963584	HF183-qPCR	86.0		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P339080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960211	HF183-qPCR	86.4		P	50 - 175
1960432	HF183-qPCR	98.3		P	50 - 175
1960444	HF183-qPCR	86.7		P	50 - 175
1960445	HF183-qPCR	82.7		P	50 - 175
1960446	HF183-qPCR	89.5		P	50 - 175
1963189	HF183-qPCR	99.1	82.3	P/P	50 - 175
1963190	HF183-qPCR	81.9		P	50 - 175
1963377	HF183-qPCR	90.5		P	50 - 175
1964711	HF183-qPCR	96.8		P	50 - 175
1965581	HF183-qPCR	84.2		P	50 - 175
1965582	HF183-qPCR	83.5		P	50 - 175
1965800	HF183-qPCR	78.1		P	50 - 175
1965801	HF183-qPCR	85.5		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	HF183-qPCR	3.51	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P339080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963189	HF183-qPCR	18.5	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: 1960208
Field Sample ID: 20030758

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1960208
Field Sample ID: 20030758

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	115	P	50 - 300

Lab Sample ID: 1960209
Field Sample ID: 20030695

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	127	P	50 - 300

Lab Sample ID: 1960210
Field Sample ID: 20030698

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300

Lab Sample ID: 1960211
Field Sample ID: G2NE1157

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	130	P	50 - 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	96.6				
	HF183-qPCR	114 122	93.7 89.4 92.6 108			3.51
	HF183-qPCR	87.7 112	99.1 82.3 81.9 90.5			18.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D650399 / E82502	Enterococci by MPN by ALS Environmental Overflow Laboratory for NED	1960204, 1960205, 1960206, 1960207
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1960183, 1960184
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1960208, 1960209, 1960210, 1960211
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1960208, 1960209, 1960210, 1960211

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	01/17/2018	01/17/2018 15:40		01/18/2018 16:27	ALS Environmental, Jax	1960204, 1960205, 1960206, 1960207
SM 10200 H (mod.)	01/18/2018	01/18/2018 12:13	Cathy Sherrer	01/24/2018	Jennifer Mihalic	1960183, 1960184
SOP-PCR-1.0	01/18/2018	01/18/2018 14:30	Avril Wood	02/07/2018	Sarah Menz	1960208, 1960209, 1960210
	01/18/2018	01/18/2018 14:30	Mailin Lopez	02/09/2018	Sarah Menz	1960211
SOP-PCR-4.0	01/18/2018	01/18/2018 14:30	Avril Wood	02/05/2018	Puja Jasrotia	1960208, 1960209, 1960210, 1960211