Biological Analysis Report

NE-DIST-2021-05-25-02

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 Southside**
Request ID: **RQ-2021-05-10-22**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 18-JUN-2021 13:52

Cheryl Swanson

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Miramar at San Jose **Collection Date/Time: 05/24/2021 11:15**

Field ID: G2NE1164 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2249911	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.9	I	ug/L	P399169	
		Phaeophytin-a	1.4	U	ug/L	P399169	
		Chlorophyll-a, Uncorrected	2.8		ug/L	P399169	

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: Goodbys CR at Baymeadows **Collection Date/Time: 05/24/2021 12:10**

Field ID: 20030593 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2249912	SM 10200 H (mod.)	Chlorophyll-a, Corrected	23		ug/L	P399169	
		Phaeophytin-a	3.2	I	ug/L	P399169	
		Chlorophyll-a, Uncorrected	26		ug/L	P399169	
2249913	ASTM D650399	ENTEROCOCCI-ENTEROLERT	62		MPN/100 mL		
2249915	SOP-PCR-1.0	HF183-qPCR**	1.1E+03	U	TSC/100 mL	P398574	
	SOP-PCR-1.2	GULL2-qPCR**	1.2E+03	U	TSC/100 mL	P398574	
	SOP-PCR-1.3	GFD-qPCR**	530	I	TSC/100 mL	P398574	
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P398574	
	SOP-PCR-1.5	DG3-qPCR**	860	U	TSC/100 mL	P398574	RPD

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-1.2: Precision data unavailable for Gull2-qPCR component.
SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P399169

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P398574

Component	Result	Code	Units
HF183-qPCR	3.3E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.2
Batch ID: P398574

Component	Result	Code	Units
GULL2-qPCR	3.6E+03	U	TSC/100 mL

Quality Assurance Report
Method Blank Results

Reference Method: SOP-PCR-1.3
Batch ID: P398574

Component	Result	Code	Units
GFD-qPCR	720	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P398574

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

Reference Method: SOP-PCR-1.5
Batch ID: P398574

Component	Result	Code	Units
DG3-qPCR	2.6E+03	U	TSC/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P399169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.9		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	104	115	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	122	111	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	94.1	83.6	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	90.8	79.1	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P398574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	81.9	124	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249315	HF183-qPCR	94.2	102	P/P	50 - 175
2249373	HF183-qPCR	111		P	50 - 175
2249590	HF183-qPCR	94.4		P	50 - 175
2249915	HF183-qPCR	96.7		P	50 - 175
2250632	HF183-qPCR	93.3		P	50 - 175
2250633	HF183-qPCR	98.3		P	50 - 175
2250634	HF183-qPCR	108		P	50 - 175
2250635	HF183-qPCR	93.2		P	50 - 175
2250636	HF183-qPCR	100		P	50 - 175
2250900	HF183-qPCR	94.7		P	50 - 175
2250950	HF183-qPCR	75.4		P	50 - 175
2251011	HF183-qPCR	163		P	50 - 175
2251012	HF183-qPCR	116		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249373	GULL2-qPCR	84.5		P	50 - 300
2249590	GULL2-qPCR	77.2		P	50 - 300
2249915	GULL2-qPCR	73.6		P	50 - 300
2250632	GULL2-qPCR	73.4		P	50 - 300
2250633	GULL2-qPCR	72.9		P	50 - 300
2250634	GULL2-qPCR	77.3		P	50 - 300
2250636	GULL2-qPCR	58.9		P	50 - 300
2250900	GULL2-qPCR	83.7		P	50 - 300
2250950	GULL2-qPCR	39.6		F	50 - 300
2251012	GULL2-qPCR	71.5		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249373	GFD-qPCR	104		P	50 - 175
2249590	GFD-qPCR	96.1		P	50 - 175
2249915	GFD-qPCR	89.7		P	50 - 175
2250632	GFD-qPCR	92.1		P	50 - 175
2250633	GFD-qPCR	85.2		P	50 - 175
2250634	GFD-qPCR	86.7		P	50 - 175
2250636	GFD-qPCR	83.3		P	50 - 175
2250900	GFD-qPCR	85.9		P	50 - 175
2250950	GFD-qPCR	82.2		P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251012	GFD-qPCR	88.6		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249315	BacR-qPCR	72.0	82.7	P/P	50 - 175
2249373	BacR-qPCR	71.7		P	50 - 175
2249590	BacR-qPCR	59.1		P	50 - 175
2249915	BacR-qPCR	63.5		P	50 - 175
2250632	BacR-qPCR	75.2		P	50 - 175
2250633	BacR-qPCR	67.7		P	50 - 175
2250634	BacR-qPCR	72.4		P	50 - 175
2250635	BacR-qPCR	79.4		P	50 - 175
2250636	BacR-qPCR	70.1		P	50 - 175
2250900	BacR-qPCR	64.9		P	50 - 175
2250950	BacR-qPCR	38.9		F	50 - 175
2251011	BacR-qPCR	68.4		P	50 - 175
2251012	BacR-qPCR	64.2		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P398574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249315	DG3-qPCR	84.2	64.0	P/P	50 - 175
2249373	DG3-qPCR	87.7		P	50 - 175
2249590	DG3-qPCR	82.4		P	50 - 175
2249915	DG3-qPCR	77.5		P	50 - 175
2250632	DG3-qPCR	78.2		P	50 - 175
2250633	DG3-qPCR	84.0		P	50 - 175
2250634	DG3-qPCR	67.2		P	50 - 175
2250635	DG3-qPCR	68.9		P	50 - 175
2250636	DG3-qPCR	85.4		P	50 - 175
2250900	DG3-qPCR	82.9		P	50 - 175
2250950	DG3-qPCR	50.6		P	50 - 175
2251011	DG3-qPCR	59.7		P	50 - 175
2251012	DG3-qPCR	61.5		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P399169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2249955	Chlorophyll-a, Uncorrected	5.84	Sample	P	0 - 25

Quality Assurance Report
Precision

Reference Method: SOP-PCR-1.0
Batch ID: P398574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2249315	HF183-qPCR	7.73	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P398574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2249315	BacR-qPCR	13.9	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P398574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2249315	DG3-qPCR	27.3	Spike	F	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Surrogates

Lab Sample ID: 2249915
Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	87.1	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	90.9	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	88.4	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	82.7	P	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	98.9				
	Chlorophyll-a, Uncorrected				5.84	
SOP-PCR-1.0	HF183-qPCR	115 104	94.2 102 111 94.4			7.73
SOP-PCR-1.2	GULL2-qPCR	111 122	84.5 77.2 73.6 73.4			
SOP-PCR-1.3	GFD-qPCR	83.6 94.1	104 96.1 89.7 92.1			
SOP-PCR-1.4	BacR-qPCR	79.1 90.8	82.7 72.0 71.7 59.1			13.9
SOP-PCR-1.5	DG3-qPCR	124 81.9	84.2 64.0 87.7 82.4			27.3

Reference Method Descriptions

Method	Description	Associated Samples
ASTM D650399	Enterococci by Enterolert/QT by ALS in Jacksonville	2249913
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2249911, 2249912
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2249915
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2249915
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2249915
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2249915
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2249915

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	05/24/2021	05/24/2021 16:32		05/25/2021 16:41	ALS Environmental, Jax	2249913
SM 10200 H (mod.)	05/25/2021	05/25/2021 15:27	Carina A. Tull	06/03/2021 09:10	Jessica Fetgatter	2249911, 2249912
SOP-PCR-1.0	05/25/2021	05/25/2021 13:50	DeAsia Armster	06/04/2021 10:41	DeAsia Armster	2249915
SOP-PCR-1.2	05/25/2021	05/25/2021 13:50	DeAsia Armster	06/10/2021 13:09	DeAsia Armster	2249915
SOP-PCR-1.3	05/25/2021	05/25/2021 13:50	DeAsia Armster	06/15/2021 08:49	Mailin Lopez	2249915
SOP-PCR-1.4	05/25/2021	05/25/2021 13:50	DeAsia Armster	06/07/2021 11:38	DeAsia Armster	2249915
SOP-PCR-1.5	05/25/2021	05/25/2021 13:50	DeAsia Armster	06/08/2021 11:08	DeAsia Armster	2249915