Biological Analysis Report

NE-DIST-2021-01-26-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
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DOH Accreditation E82502

Event Description: **LSJR North 2021**
Request ID: **RQ-2021-01-25-06**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 23-FEB-2021 12:05

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: Blockhouse At Broward Rd. **Collection Date/Time: 01/25/2021 12:00**

Field ID: G2NE1180 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221238	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.3		ug/L	P393141	
		Phaeophytin-a	2.7		ug/L	P393141	
		Chlorophyll-a, Uncorrected	8.1		ug/L	P393141	
2221245	ASTM D650399	ENTEROCOCCI-ENTEROLERT	884		MPN/100 mL		
2221253	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P392614	MS
	SOP-PCR-1.2	GULL2-qPCR**	1.2E+03	UJ	TSC/100 mL	P392614	MS
	SOP-PCR-1.3	GFD-qPCR**	960	I	TSC/100 mL	P392614	
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P392614	
	SOP-PCR-1.5	DG3-qPCR**	860	U	TSC/100 mL	P392614	

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. Refer to the Lab Analysis Report for an explanation of QC Codes.
SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Sample Location: Tributary To Trout At Bessent Rd. **Collection Date/Time: 01/25/2021 12:35**

Field ID: G2NE1207 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221249	ASTM D650399	ENTEROCOCCI-ENTEROLERT	2420	J	MPN/100 mL		

Ref. Method and Comment:
ASTM D650399: All Quanti-Tray wells were positive. Results may be higher than reported.

Sample Location: Tributary To Trout At Capper Rd. **Collection Date/Time: 01/25/2021 12:45**

Field ID: G2NE1208 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221240	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1	I	ug/L	P393141	
		Phaeophytin-a	0.90	U	ug/L	P393141	
		Chlorophyll-a, Uncorrected	2.2		ug/L	P393141	
2221247	ASTM D650399	ENTEROCOCCI-ENTEROLERT	2420	J	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.
ASTM D650399: All Quanti-Tray wells were positive. Results may be higher than reported.

Sample Location: Blockhouse Cr @ Duval Rd **Collection Date/Time: 01/25/2021 13:15**

Field ID: 20030746 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221248	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	2420		MPN/100 mL		

Sample Location: Blockhouse 100m Abv Irma Rd **Collection Date/Time: 01/25/2021 13:35**

Field ID: G2NE1159 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221239	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.9		ug/L	P393141	
		Phaeophytin-a	0.90	U	ug/L	P393141	

Field ID: G2NE1159 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221239	SM 10200 H (mod.)	Chlorophyll-a, Uncorrected	5.4		ug/L	P393141	
2221246	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	921		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: Long Br At Evergreen Ave **Collection Date/Time: 01/25/2021 14:10**

Field ID: G2NE0735 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2221237	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7	I	ug/L	P393141	
		Phaeophytin-a	0.90	U	ug/L	P393141	
		Chlorophyll-a, Uncorrected	1.8	I	ug/L	P393141	
2221244	ASTM D650399	ENTEROCOCCI-ENTEROLERT	2420	J	MPN/100 mL		
2221252	SOP-PCR-1.0	HF183-qPCR**	585		GEU/100 mL	P392614	MS
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P392614	
	SOP-PCR-1.5	DG3-qPCR**	860	U	TSC/100 mL	P392614	

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.
ASTM D650399: All Quanti-Tray wells were positive. Results may be higher than reported.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P393141

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: P392614

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

Reference Method: SOP-PCR-1.2
Batch ID: P392614

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

Reference Method: SOP-PCR-1.3
Batch ID: P392614

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

Quality Assurance Report
Method Blank Results

Reference Method: SOP-PCR-1.4
Batch ID: P392614

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

Reference Method: SOP-PCR-1.5
Batch ID: P392614

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: P393141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	105		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P392614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	132	98.8	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P392614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	86.6	83.2	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P392614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	103	73.4	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P392614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	97.0	71.0	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P392614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	67.8	94.4	P/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220204	HF183-qPCR	101	93.0	P/P	50 - 175
2220205	HF183-qPCR	91.1		P	50 - 175
2220231	HF183-qPCR	89.3		P	50 - 175
2220509	HF183-qPCR	106		P	50 - 175
2220510	HF183-qPCR	99.1		P	50 - 175
2220598	HF183-qPCR	82.9		P	50 - 175
2221252	HF183-qPCR	92.7		P	50 - 175
2221253	HF183-qPCR	79.9		P	50 - 175
2221347	HF183-qPCR	82.3		P	50 - 175
2221348	HF183-qPCR	107		P	50 - 175
2221349	HF183-qPCR	102		P	50 - 175
2221978	HF183-qPCR	51.5		P	50 - 175
2222088	HF183-qPCR	35.7		F	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220205	GULL2-qPCR	67.7		P	50 - 300
2221253	GULL2-qPCR	48.4		F	50 - 300
2221347	GULL2-qPCR	80.5		P	50 - 300
2221348	GULL2-qPCR	60.6		P	50 - 300
2221349	GULL2-qPCR	76.5		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220205	GFD-qPCR	108		P	50 - 175
2220509	GFD-qPCR	99.0		P	50 - 175
2220510	GFD-qPCR	105		P	50 - 175
2220598	GFD-qPCR	108		P	50 - 175
2221253	GFD-qPCR	104		P	50 - 175
2221347	GFD-qPCR	96.0		P	50 - 175
2221348	GFD-qPCR	89.4		P	50 - 175
2221349	GFD-qPCR	93.5		P	50 - 175
2221978	GFD-qPCR	113		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220204	BacR-qPCR	84.5	91.6	P/P	50 - 175
2220205	BacR-qPCR	85.9		P	50 - 175
2220231	BacR-qPCR	97.4		P	50 - 175
2220509	BacR-qPCR	86.2		P	50 - 175
2220510	BacR-qPCR	86.4		P	50 - 175
2220598	BacR-qPCR	62.2		P	50 - 175
2221252	BacR-qPCR	82.4		P	50 - 175
2221253	BacR-qPCR	66.7		P	50 - 175
2221347	BacR-qPCR	82.2		P	50 - 175
2221348	BacR-qPCR	83.5		P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2221349	BacR-qPCR	89.7		P	50 - 175
2221978	BacR-qPCR	80.3		P	50 - 175
2222088	BacR-qPCR	77.4		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P392614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220204	DG3-qPCR	112	101	P/P	50 - 175
2220205	DG3-qPCR	93.9		P	50 - 175
2220231	DG3-qPCR	95.1		P	50 - 175
2221252	DG3-qPCR	100		P	50 - 175
2221253	DG3-qPCR	77.7		P	50 - 175
2221347	DG3-qPCR	93.5		P	50 - 175
2221348	DG3-qPCR	83.8		P	50 - 175
2221349	DG3-qPCR	89.1		P	50 - 175
2222088	DG3-qPCR	88.9		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P393141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2221217	Chlorophyll-a, Corrected	1.94	Sample	P	0 - 25
2221217	Chlorophyll-a, Uncorrected	1.26	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P392614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220204	HF183-qPCR	8.55	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P392614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220204	BacR-qPCR	8.06	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P392614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220204	DG3-qPCR	10.8	Spike	P	0 - 25

Quality Assurance Report
Precision

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2221252
Field Sample ID: G2NE0735

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	93.1	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	104	P	50 - 300

Lab Sample ID: 2221253
Field Sample ID: G2NE1180

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	74.9	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	88.0	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	90.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	87.0	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	73.3	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	105			1.94	
	Chlorophyll-a, Uncorrected				1.26	
SOP-PCR-1.0	HF183-qPCR	98.8 132	101 93.0 91.1 89.3			8.55
SOP-PCR-1.2	GULL2-qPCR	83.2 86.6	67.7 48.4 80.5 60.6			
SOP-PCR-1.3	GFD-qPCR	73.4 103	108 99.0 105 108			
SOP-PCR-1.4	BacR-qPCR	71.0 97.0	84.5 91.6 85.9 97.4			8.06
SOP-PCR-1.5	DG3-qPCR	94.4 67.8	112 101 93.9 95.1			10.8

Reference Method Descriptions

Method	Description	Associated Samples
ASTM D650399	Enterococci by Enterolert/QT by ALS in Jacksonville	2221244, 2221245, 2221247, 2221249
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2221237, 2221238, 2221239, 2221240
SM 9223 B Quanti-Tray	E. coli by Colilert/QT by ALS in Jacksonville	2221246, 2221248
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2221252, 2221253
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2221253
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2221253

Reference Method Descriptions

Method	Description	Associated Samples
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2221252, 2221253
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2221252, 2221253

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	01/25/2021	01/25/2021 16:23		01/26/2021 17:42	ALS Environmental, Jax	2221244, 2221245, 2221247, 2221249
SM 10200 H (mod.)	01/26/2021	01/26/2021 14:15	Jessica Sherman	01/28/2021 13:42	Yuliya Danyuk	2221237, 2221238, 2221239, 2221240
SM 9223 B Quanti-Tray	01/25/2021	01/25/2021 16:15		01/26/2021 17:53	ALS Environmental, Jax	2221246, 2221248
SOP-PCR-1.0	01/26/2021	01/26/2021 13:25	DeAsia Armster	01/29/2021 11:30	Lauren Campbell	2221252, 2221253
SOP-PCR-1.2	01/26/2021	01/26/2021 13:25	DeAsia Armster	02/02/2021 08:27	Mailin Lopez	2221253
SOP-PCR-1.3	01/26/2021	01/26/2021 13:25	DeAsia Armster	02/02/2021 11:28	Mailin Lopez	2221253
SOP-PCR-1.4	01/26/2021	01/26/2021 13:25	DeAsia Armster	01/29/2021 16:04	Lauren Campbell	2221252, 2221253
SOP-PCR-1.5	01/26/2021	01/26/2021 13:25	DeAsia Armster	01/31/2021 09:02	Mailin Lopez	2221252, 2221253