

Biological Analysis Report

NE-DIST-2020-01-16-01

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 West 2020**
Request ID: **RQ-2020-01-13-29**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 13-FEB-2020 09:50



NON-CONFORMANCE REPORT INCLUDED

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: McGirts Creek at Old Plank Road

Collection Date/Time: 01/15/2020 10:20

Field ID: 20030346

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149749	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P378614	
		Phaeophytin-a	0.90	U	ug/L	P378614	
		Chlorophyll-a, Uncorrected	0.70	I	ug/L	P378614	
2149755	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	201		MPN/100 mL		
2149760	SOP-PCR-1.0	HF183-purified-qPCR**	16	UJ	GEU/100 mL	P377625	LCS, SUR
	SOP-PCR-1.4	BacR-qPCR**	2.1E+03	I	TSC/100 mL	P377198	
	SOP-PCR-1.5	DG3-purified-qPCR**	140	UJ	TSC/100 mL	P377625	LCS, SUR

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-1.0: Quality control failure(s) observed. See QA report for details. Precision data unavailable for Analysis batch A97391. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.5: Quality control failure(s) observed. See QA report for details. Precision data unavailable for Analysis batch A97434. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Yellow Water CR at SR 228

Collection Date/Time: 01/15/2020 12:10

Field ID: 20030549

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149751	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	U	ug/L	P378614	
		Phaeophytin-a	1.4	U	ug/L	P378614	
		Chlorophyll-a, Uncorrected	0.92	U	ug/L	P378614	

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: Trout River at Garden St

Collection Date/Time: 01/15/2020 11:15

Field ID: 20030751

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149750	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	U	ug/L	P378614	
		Phaeophytin-a	1.3	U	ug/L	P378614	
		Chlorophyll-a, Uncorrected	0.86	U	ug/L	P378614	
2149756	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	172		MPN/100 mL		
2149761	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P377135	LCS

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 1.2 U for Chl-a Corrected, 0.86 U for Chl-a Uncorrected, and 0.13 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

SOP-PCR-1.0: See NCR 8164.

Sample Location: Wills BR at Watergate rd.

Collection Date/Time: 01/15/2020 13:30

Field ID: G2NE1183

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149752	SM 10200 H (mod.)	Chlorophyll-a, Corrected	17		ug/L	P378614	
		Phaeophytin-a	3.2		ug/L	P378614	
		Chlorophyll-a, Uncorrected	20		ug/L	P378614	
2149757	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	276		MPN/100 mL		

Field ID: G2NE1183

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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.

Non-Conformance Report

NCR ID: 8164

Event(s)

NE-DIST-2020-01-16-01

Job(s)

TLH-2020-01-16-44

Sample(s)

2149761

Test(s)

PCR-HF183

NCR Type: ANALYSIS

NCR Category: Analytical Measurement

Observation: Spike was not added at time of extraction, resulting in 0% recovery for LCS.

Resolution: All other controls passed and sample results are not affected. Data will be reported unqualified. Customer was contacted.

Authorized by/Date: Puja Jasrotia 2/6/2020

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.

Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P378614

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: P377135

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

Reference Method: SOP-PCR-1.0

Batch ID: P377625

Component	Result	Code	Units
HF183-purified-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.4

Batch ID: P377198

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

Reference Method: SOP-PCR-1.5

Batch ID: P377625

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.5
 Batch ID: P377625

Component	Result	Code	Units
DG3-purified-qPCR	430	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P378614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P377135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	139	0.0	P/F	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P377625

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	115	19.6	P/F	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P377198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	103	140	P/P	50 - 175

Reference Method: SOP-PCR-1.5
 Batch ID: P377625

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-purified-qPCR	79.2	28.9	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P377135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149258	HF183-qPCR	116		P	50 - 175
2149259	HF183-qPCR	98.5		P	50 - 175
2149260	HF183-qPCR	107		P	50 - 175
2149261	HF183-qPCR	121		P	50 - 175
2149540	HF183-qPCR	94.3		P	50 - 175
2149541	HF183-qPCR	115	99.1	P/P	50 - 175
2149542	HF183-qPCR	101		P	50 - 175
2149543	HF183-qPCR	113		P	50 - 175
2149592	HF183-qPCR	116		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P377135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149593	HF183-qPCR	114		P	50 - 175
2149639	HF183-qPCR	109		P	50 - 175
2149640	HF183-qPCR	98.2		P	50 - 175
2149761	HF183-qPCR	92.0		P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P377625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149760	HF183-purified-qPCR	114		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P377198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149641	BacR-qPCR	67.0	74.2	P/P	50 - 175
2149760	BacR-qPCR	60.3		P	50 - 175
2149996	BacR-qPCR	79.0		P	50 - 175
2149997	BacR-qPCR	85.0		P	50 - 175
2149998	BacR-qPCR	81.9		P	50 - 175
2149999	BacR-qPCR	78.9		P	50 - 175
2150587	BacR-qPCR	82.9		P	50 - 175
2150588	BacR-qPCR	94.1		P	50 - 175
2150589	BacR-qPCR	88.4		P	50 - 175
2150590	BacR-qPCR	81.6		P	50 - 175
2150918	BacR-qPCR	79.7		P	50 - 175
2150919	BacR-qPCR	81.2		P	50 - 175
2150992	BacR-qPCR	85.2		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P377625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149760	DG3-purified-qPCR	107		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0

Batch ID: P377135

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149541	HF183-qPCR	14.6	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4

Batch ID: P377198

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149641	BacR-qPCR	10.1	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: 2149760
 Field Sample ID: 20030346

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	10.1	F	50 - 300
SOP-PCR-1.4	SKETA-qPCR	59.8	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	10.8	F	50 - 300

Lab Sample ID: 2149761
 Field Sample ID: 20030751

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	57.8	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	107							
SOP-PCR-1.0	HF183-purified-qPCR	19.6	115	114					
	HF183-qPCR	0.0	139	98.2	92.0	121			14.6
				116					
SOP-PCR-1.4	BacR-qPCR	140	103	67.0	74.2	60.3			10.1
				79.0					
SOP-PCR-1.5	DG3-purified-qPCR	28.9	79.2	107					

Reference Method Descriptions

Method	Description	Associated Samples
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2149749, 2149750, 2149751, 2149752
SM 9223 B Quanti-Tray	E. coli by Colilert/QT by ALS in Jacksonville	2149755, 2149756, 2149757
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2149760
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2149761
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2149760
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2149760

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/16/2020	01/16/2020 13:45	Carina A. Tull	01/23/2020 15:22	Jessica Fetgatter	2149749, 2149750, 2149751, 2149752
SM 9223 B Quanti-Tray	01/15/2020	01/15/2020 15:10		01/16/2020 15:26	ALS Environmental, Jax	2149755, 2149756, 2149757
SOP-PCR-1.0	01/16/2020	01/16/2020 14:30	Angela Smith	01/22/2020 10:18	Lauren Campbell	2149761
	01/16/2020	01/16/2020 14:30	Angela Smith	02/07/2020 11:24	Lauren Campbell	2149760
SOP-PCR-1.4	01/16/2020	01/16/2020 14:30	Angela Smith	01/24/2020 14:50	Lauren Campbell	2149760
SOP-PCR-1.5	01/16/2020	01/16/2020 14:30	Angela Smith	02/11/2020 11:04	Lauren Campbell	2149760