

Biological Analysis Report

NW-DIST-2019-12-04-03

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

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Pensacola monthly**
Request ID: **RQ-2019-12-02-57**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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)
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Phone (850) 245-8177

Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 06-JAN-2020 11:47



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: 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: Carpenter Creek upstream of 9th Avenue

Collection Date/Time: 12/02/2019 10:24

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140491	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	441		MPN/100 mL		
2140492	SOP-PCR-1.0	HF183-qPCR**	140	UQ	GEU/100 mL	P375217	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	UQ	TSC/100 mL	P375217	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	UQ	TSC/100 mL	P376415	LCS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	UQ	TSC/100 mL	P375217	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	UQ	TSC/100 mL	P375217	LCS

Non-Conformance Report

NCR ID: 8047

Event(s)

NW-DIST-2019-12-04-03

Job(s)

TLH-2019-12-04-82

Sample(s)

2140492

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Sample will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 12/17/2019

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: SOP-PCR-1.0
Batch ID: P375217

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

Reference Method: SOP-PCR-1.2
Batch ID: P375217

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

Reference Method: SOP-PCR-1.3
Batch ID: P376415

Component	Result	Code	Units
GFD-purified-qPCR	2.0E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P375217

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.5
 Batch ID: P375217

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P375217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	112	91.1	P/P	50 - 175

Reference Method: SOP-PCR-1.2
 Batch ID: P375217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	89.3	50.4	P/P	50 - 300

Reference Method: SOP-PCR-1.3
 Batch ID: P376415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	58.6	34.5	P/F	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P375217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	102	90.9	P/P	50 - 175

Reference Method: SOP-PCR-1.5
 Batch ID: P375217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	106	250	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P375217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140492	HF183-qPCR	103	102	P/P	50 - 175
2141077	HF183-qPCR	98.8		P	50 - 175
2141145	HF183-qPCR	98.9		P	50 - 175
2141146	HF183-qPCR	99.8		P	50 - 175
2141486	HF183-qPCR	140		P	50 - 175
2141489	HF183-qPCR	96.7		P	50 - 175
2141490	HF183-qPCR	103		P	50 - 175
2141521	HF183-qPCR	88.0		P	50 - 175
2141595	HF183-qPCR	99.8		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P375217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141874	HF183-qPCR	96.5		P	50 - 175
2141875	HF183-qPCR	95.8		P	50 - 175
2141876	HF183-qPCR	117		P	50 - 175
2141877	HF183-qPCR	105		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P375217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140492	GULL2-qPCR	87.9	94.5	P/P	50 - 300
2141489	GULL2-qPCR	74.4		P	50 - 300
2141490	GULL2-qPCR	81.6		P	50 - 300
2141595	GULL2-qPCR	71.1		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P376415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140492	GFD-purified-qPCR	122		P	50 - 175
2141489	GFD-purified-qPCR	109		P	50 - 175
2141490	GFD-purified-qPCR	89.6		P	50 - 175
2141595	GFD-purified-qPCR	100		P	50 - 175
2146146	GFD-purified-qPCR	89.0	101	P/P	50 - 175
2146147	GFD-purified-qPCR	86.5		P	50 - 175
2146148	GFD-purified-qPCR	109		P	50 - 175
2146149	GFD-purified-qPCR	95.2		P	50 - 175
2146384	GFD-purified-qPCR	88.1		P	50 - 175
2146385	GFD-purified-qPCR	99.9		P	50 - 175
2146386	GFD-purified-qPCR	87.4		P	50 - 175
2146387	GFD-purified-qPCR	99.5		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P375217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140492	BacR-qPCR	90.0	91.8	P/P	50 - 175
2141077	BacR-qPCR	69.5		P	50 - 175
2141489	BacR-qPCR	88.9		P	50 - 175
2141490	BacR-qPCR	86.5		P	50 - 175
2141521	BacR-qPCR	76.2		P	50 - 175
2141595	BacR-qPCR	79.7		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P375217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140492	DG3-qPCR	79.9	89.3	P/P	50 - 175
2141489	DG3-qPCR	50.9		P	50 - 175
2141490	DG3-qPCR	66.7		P	50 - 175
2141595	DG3-qPCR	78.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
 Batch ID: P375217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140492	HF183-qPCR	0.435	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
 Batch ID: P375217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140492	GULL2-qPCR	7.20	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P376415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146146	GFD-purified-qPCR	13.0	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P375217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140492	BacR-qPCR	2.03	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
 Batch ID: P375217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140492	DG3-qPCR	11.0	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2140492
 Field Sample ID: G4NW0415

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	86.2	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	96.0	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	95.8	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision
				LCS SMP MS

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	91.1	112	103	102	98.8			0.435
SOP-PCR-1.2	GULL2-qPCR	50.4	89.3	87.9	94.5	74.4			7.20
SOP-PCR-1.3	GFD-purified-qPCR	34.5	58.6	89.0	101	86.5			13.0
SOP-PCR-1.4	BacR-qPCR	90.9	102	90.0	91.8	69.5			2.03
SOP-PCR-1.5	DG3-qPCR	250	106	79.9	89.3	50.9			11.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 9223 B Quanti-Tray / E71969	E. coli by Colilert-18/QT by UWF in Pensacola	2140491
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2140492
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2140492
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2140492
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2140492
SOP-PCR-1.5 / E31780	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2140492

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 9223 B Quanti-Tray	12/02/2019	12/02/2019 14:00		12/03/2019 11:29	UWF Lab	2140491
SOP-PCR-1.0	12/04/2019	12/04/2019 15:45	Angela Smith	12/27/2019 10:13	Lauren Campbell	2140492
SOP-PCR-1.2	12/04/2019	12/04/2019 15:45	Angela Smith	01/02/2020 14:41	Mailin Lopez	2140492
SOP-PCR-1.3	12/04/2019	12/04/2019 15:45	Mailin Lopez	01/02/2020 11:44	Mailin Lopez	2140492
SOP-PCR-1.4	12/04/2019	12/04/2019 15:45	Angela Smith	12/27/2019 11:25	Lauren Campbell	2140492
SOP-PCR-1.5	12/04/2019	12/04/2019 15:45	Angela Smith	12/18/2019 16:04	Lauren Campbell	2140492