

Biological Analysis Report

WPCS-2023-02-07-01

Florida DEP 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: **PROP - Bruce Beach - Source ID Sampling Event**

Request ID: **RQ-2023-02-06-66**

Customer: **WPCS**

Project ID: **PROP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
Attn: Anita Nash

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Date Certified: 20-MAR-2023 09:14



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: Outlet South Side of Road at Coyle Extension and Main Street **Collection Date/Time: 02/07/2023 08:40**

Field ID: 1.0

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385424	Enterolert/QT	Enterococci-Quanti-Tray	160		MPN/100 mL		
2385428	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P425465	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P425465	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P425465	
2385431	SOP-PCR-1.1	HF183-PMA treated-qPCR**	280	UJ	TSC/100 mL	P425488	SUR
		HF183-purified-untreated-qPCR**	280	UJ	TSC/100 mL	P425488	LCS, SUR

Ref. Method and Comment:

SOP-PCR-1.1: Precision data unavailable for HF183-purified-untreated-qPCR. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Outlet Southeast Side of Road at Spring Street and Cedar Street, in Bay **Collection Date/Time: 02/07/2023 09:05**

Field ID: EB_02072023

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385427	Enterolert/QT	Enterococci-Quanti-Tray	1	U	MPN/100 mL		

Sample Location: Outlet Southeast Side of Road at Spring Street and Cedar Street, in Bay **Collection Date/Time: 02/07/2023 09:15**

Field ID: 5.3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385425	Enterolert/QT	Enterococci-Quanti-Tray	10		MPN/100 mL		
2385429	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P425465	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P425465	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P425465	
2385432	SOP-PCR-1.1	HF183-PMA treated-qPCR**	280	UJ	TSC/100 mL	P425488	SUR
		HF183-purified-untreated-qPCR**	280	UJ	TSC/100 mL	P425488	LCS, SUR

Ref. Method and Comment:

SOP-PCR-1.1: Precision data unavailable for HF183-purified-untreated-qPCR. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Manhole West Side of Spring Street North of Romana and South of Garden **Collection Date/Time: 02/07/2023 09:45**

Field ID: 5.2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385426	Enterolert/QT	Enterococci-Quanti-Tray	63		MPN/100 mL		
2385430	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P425465	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P425465	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P425465	
2385433	SOP-PCR-1.1	HF183-PMA treated-qPCR**	280	UJ	TSC/100 mL	P425488	SUR
		HF183-purified-untreated-qPCR**	280	UJ	TSC/100 mL	P425488	LCS, SUR

Ref. Method and Comment:

SOP-PCR-1.1: Precision data unavailable for HF183-purified-untreated-qPCR. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.1
Batch ID: P425488

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

Reference Method: SOP-PCR-1.2
Batch ID: P425465

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

Reference Method: SOP-PCR-1.3
Batch ID: P425465

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

Reference Method: SOP-PCR-1.5
Batch ID: P425465

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.1
Batch ID: P425488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-untreated-qPCR	98.3	3.53	P/F	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P425465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	103	127	P/P	50 - 300
GULL2-qPCR	97.6	84.6	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P425465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	93.1	91.4	P/P	50 - 175
GFD-qPCR	100	94.8	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P425465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	99.0	108	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.1

Batch ID: P425488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385431	HF183-PMA treated-qPCR	98.5		P	50 - 175
2385431	HF183-purified-untreated-qPCR	102		P	50 - 175
2385432	HF183-PMA treated-qPCR	107		P	50 - 175
2385432	HF183-purified-untreated-qPCR	114		P	50 - 175
2385433	HF183-PMA treated-qPCR	97.5		P	50 - 175
2385433	HF183-purified-untreated-qPCR	117		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P425465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385071	GULL2-qPCR	85.5	93.8	P/P	50 - 300
2385072	GULL2-qPCR	82.2		P	50 - 300
2385073	GULL2-qPCR	90.3		P	50 - 300
2385428	GULL2-qPCR	98.9		P	50 - 300
2385429	GULL2-qPCR	93.9		P	50 - 300
2385430	GULL2-qPCR	98.8		P	50 - 300
2385804	GULL2-qPCR	88.4		P	50 - 300
2385907	GULL2-qPCR	80.2		P	50 - 300
2386201	GULL2-qPCR	78.8		P	50 - 300
2386202	GULL2-qPCR	73.5		P	50 - 300
2386211	GULL2-qPCR	88.2		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P425465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385071	GFD-qPCR	96.7	88.6	P/P	50 - 175
2385072	GFD-qPCR	88.8		P	50 - 175
2385073	GFD-qPCR	91.0		P	50 - 175
2385428	GFD-qPCR	82.7		P	50 - 175
2385429	GFD-qPCR	89.1		P	50 - 175
2385430	GFD-qPCR	94.1		P	50 - 175
2385804	GFD-qPCR	101		P	50 - 175
2385907	GFD-qPCR	90.8		P	50 - 175
2386201	GFD-qPCR	93.3		P	50 - 175
2386202	GFD-qPCR	87.6		P	50 - 175
2386211	GFD-qPCR	106		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P425465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385071	DG3-qPCR	89.9	96.2	P/P	50 - 175
2385072	DG3-qPCR	100		P	50 - 175
2385073	DG3-qPCR	101		P	50 - 175
2385428	DG3-qPCR	103		P	50 - 175
2385429	DG3-qPCR	105		P	50 - 175
2385430	DG3-qPCR	99.3		P	50 - 175
2385804	DG3-qPCR	104		P	50 - 175
2385851	DG3-qPCR	96.8		P	50 - 175
2385907	DG3-qPCR	104		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P425465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386142	DG3-qPCR	92.1		P	50 - 175
2386201	DG3-qPCR	105		P	50 - 175
2386202	DG3-qPCR	88.9		P	50 - 175
2386211	DG3-qPCR	105		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.2
Batch ID: P425465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385071	GULL2-qPCR	9.19	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P425465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385071	GFD-qPCR	8.73	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P425465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385071	DG3-qPCR	6.79	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2385428
Field Sample ID: 1.0

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	97.5	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	93.7	P	50 - 300

Lab Sample ID: 2385429
Field Sample ID: 5.3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	89.4	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	91.5	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 2385430
 Field Sample ID: 5.2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	93.9	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	96.0	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	97.5	P	50 - 300

Lab Sample ID: 2385431
 Field Sample ID: 1.0

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.1	SKETA-qPCR	1.58	F	50 - 300
SOP-PCR-1.1	SKETA-qPCR	1.91	F	50 - 300

Lab Sample ID: 2385432
 Field Sample ID: 5.3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.1	SKETA-qPCR	3.88	F	50 - 300
SOP-PCR-1.1	SKETA-qPCR	1.73	F	50 - 300

Lab Sample ID: 2385433
 Field Sample ID: 5.2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.1	SKETA-qPCR	0.765	F	50 - 300
SOP-PCR-1.1	SKETA-qPCR	0.445	F	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision	
									SMP	MS
SOP-PCR-1.1	HF183-PMA treated-qPCR				98.5	107	97.5			
	HF183-purified-untreated-qPCR	3.53	98.3		102	114	117			
SOP-PCR-1.2	GULL2-qPCR	103	84.6	97.6	80.2	85.5	93.8			9.19
		127			82.2					
SOP-PCR-1.3	GFD-qPCR	93.1	94.8	100	96.7	88.6	88.8			8.73
		91.4			91.0					
SOP-PCR-1.5	DG3-qPCR	108	99.0		89.9	96.2	100			6.79
					101					

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert/QT by UWF in Pensacola	2385424, 2385425, 2385426, 2385427
SOP-PCR-1.1	Quantitative Differentiation of live human-specific Bacteroides cells with Propidium Monazide and quantitative polymerase chain reaction	2385431, 2385432, 2385433
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2385428, 2385429, 2385430
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2385428, 2385429, 2385430
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2385428, 2385429, 2385430

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	02/07/2023	02/07/2023 13:30		02/08/2023 14:04	UWF Lab	2385424, 2385425, 2385426, 2385427
SOP-PCR-1.1	02/07/2023	02/07/2023 17:40	Claudia Castro	03/02/2023 09:45	Roberta Tatti	2385431, 2385432, 2385433
SOP-PCR-1.2	02/07/2023	02/07/2023 18:45	Claudia Castro	03/01/2023 14:20	Jennifer Mihalic	2385428, 2385429, 2385430
SOP-PCR-1.3	02/07/2023	02/07/2023 18:45	Claudia Castro	02/23/2023 12:20	Jennifer Mihalic	2385428, 2385429, 2385430
SOP-PCR-1.5	02/07/2023	02/07/2023 18:45	Claudia Castro	02/20/2023 15:32	Roberta Tatti	2385428, 2385429, 2385430