

Biological Analysis Report

NW-DIST-2019-10-22-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

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

Event Description: **PENS/CANT RUN**
Request ID: **RQ-2019-10-21-24**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Date Certified: 27-NOV-2019 12:39



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: Sanders Beach off I Street Dock

Collection Date/Time: 10/21/2019 09:40

Field ID: G4NW0492

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130149	Enterolert/QT	Enterococci-Quanti-Tray	31		MPN/100 mL		
2130155	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P372664	LCS

Ref. Method and Comment:
 SOP-PCR-1.0: Precision data unavailable for Analysis Batch A95544.

Sample Location: Jackson Creek upstream of Old Corry Field Road

Collection Date/Time: 10/21/2019 10:00

Field ID: G4NW0430

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130148	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	459		MPN/100 mL		
2130154	SOP-PCR-1.0	HF183-qPCR**	170	I	GEU/100 mL	P372664	LCS

Ref. Method and Comment:
 SOP-PCR-1.0: Precision data unavailable for Analysis Batch A95544.

Sample Location: Rest Area Run below Beaver Pond Creek

Collection Date/Time: 10/21/2019 10:45

Field ID: G5NW0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130145	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P373587	
		Phaeophytin-a	0.90	U	ug/L	P373587	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P373587	
2130150	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	144		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: Ten Mile Creek upstream of Pine Forest Road

Collection Date/Time: 10/21/2019 11:15

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130152	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	243		MPN/100 mL		
2130156	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P372898	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P372898	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	190	IJ	TSC/100 mL	P373574	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P372898	LCS
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P372898	LCS

Ref. Method and Comment:
 SOP-PCR-1.0: Precision data unavailable due to inhibition in QC sample.
 SOP-PCR-1.2: Precision data unavailable due to inhibition in QC sample.
 SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.
 SOP-PCR-1.5: Precision data unavailable for Analysis Batch A95726

Sample Location: Direct Runoff-Graveyard Branch @ Tradewinds Dr

Collection Date/Time: 10/21/2019 11:55

Field ID: G4NW0176

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130146	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.90	U	ug/L	P373587	

Field ID: G4NW0176

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130146	SM 10200 H (mod.)	Phaeophytin-a	0.98	U	ug/L	P373587	
		Chlorophyll-a, Uncorrected	0.65	U	ug/L	P373587	
2130151	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	959		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: Carpenter Creek upstream of 9th Avenue

Collection Date/Time: 10/21/2019 12:30

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2130144	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P373587	
		Phaeophytin-a	0.90	U	ug/L	P373587	
		Chlorophyll-a, Uncorrected	0.66	I	ug/L	P373587	
2130147	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	350		MPN/100 mL		
2130153	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P372664	LCS
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P372664	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	UJ	TSC/100 mL	P373574	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P372664	LCS
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P372664	LCS

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: Precision data unavailable for Analysis Batch A95544.

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A95684

SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A95590.

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P373587

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.89	U	ug/L
Chlorophyll-a, Uncorrected	0.65	U	ug/L
Phaeophytin-a	0.98	U	ug/L

Reference Method: SOP-PCR-1.0

Batch ID: P372664

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

Reference Method: SOP-PCR-1.0

Batch ID: P372898

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.2
 Batch ID: P372664

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

Reference Method: SOP-PCR-1.2
 Batch ID: P372898

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

Reference Method: SOP-PCR-1.3
 Batch ID: P373574

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
 Batch ID: P372664

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

Reference Method: SOP-PCR-1.4
 Batch ID: P372898

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

Reference Method: SOP-PCR-1.5
 Batch ID: P372664

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

Reference Method: SOP-PCR-1.5
 Batch ID: P372898

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: P373587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	110		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P372664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P372664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	95.7	182	P/F	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P372898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	79.3	152	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P372664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	93.5	161	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P372898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	75.8	288	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P373574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	109	424	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P372664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	66.5	323	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P372898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	117	304	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P372664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	136	226	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P372898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	94.7	249	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P372664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129393	HF183-qPCR	142		P	50 - 175
2129394	HF183-qPCR	121		P	50 - 175
2129592	HF183-qPCR	133		P	50 - 175
2129593	HF183-qPCR	121		P	50 - 175
2129747	HF183-qPCR	123		P	50 - 175
2130153	HF183-qPCR	123		P	50 - 175
2130154	HF183-qPCR	153		P	50 - 175
2130155	HF183-qPCR	125		P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P372898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130156	HF183-qPCR	110		P	50 - 175
2130207	HF183-qPCR	105		P	50 - 175
2130284	HF183-qPCR	97.8		P	50 - 175
2130285	HF183-qPCR	108		P	50 - 175
2130286	HF183-qPCR	97.8		P	50 - 175
2130342	HF183-qPCR	108		P	50 - 175
2130343	HF183-qPCR	103		P	50 - 175
2130344	HF183-qPCR	109		P	50 - 175
2130581	HF183-qPCR	95.0		P	50 - 175
2130582	HF183-qPCR	97.0		P	50 - 175
2130583	HF183-qPCR	101		P	50 - 175
2130632	HF183-qPCR	112		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P372664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129915	GULL2-qPCR	91.4		P	50 - 300
2129917	GULL2-qPCR	81.3		P	50 - 300
2130153	GULL2-qPCR	99.0		P	50 - 300

Reference Method: SOP-PCR-1.2

Batch ID: P372898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130156	GULL2-qPCR	68.4		P	50 - 300
2130581	GULL2-qPCR	61.6		P	50 - 300
2130582	GULL2-qPCR	57.3		P	50 - 300
2132982	GULL2-qPCR	21.2	2.07	F/F	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P373574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127749	GFD-purified-qPCR	208		F	50 - 175
2127902	GFD-purified-qPCR	281		F	50 - 175
2128287	GFD-purified-qPCR	223		F	50 - 175
2130153	GFD-purified-qPCR	249		F	50 - 175
2130156	GFD-purified-qPCR	293		F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3

Batch ID: P373574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130581	GFD-purified-qPCR	162		P	50 - 175
2130582	GFD-purified-qPCR	232		F	50 - 175
2132982	GFD-purified-qPCR	258	261	F/F	50 - 175
2133850	GFD-purified-qPCR	262		F	50 - 175
2133851	GFD-purified-qPCR	315		F	50 - 175
2133852	GFD-purified-qPCR	243		F	50 - 175
2135501	GFD-purified-qPCR	260		F	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P372664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129393	BacR-qPCR	97.0		P	50 - 175
2129394	BacR-qPCR	83.1		P	50 - 175
2129592	BacR-qPCR	69.2		P	50 - 175
2129593	BacR-qPCR	63.8		P	50 - 175
2130153	BacR-qPCR	66.9		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P372898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130156	BacR-qPCR	90.3		P	50 - 175
2130207	BacR-qPCR	103		P	50 - 175
2130284	BacR-qPCR	70.1		P	50 - 175
2130285	BacR-qPCR	98.2		P	50 - 175
2130286	BacR-qPCR	78.1		P	50 - 175
2130581	BacR-qPCR	72.4		P	50 - 175
2130582	BacR-qPCR	80.1		P	50 - 175
2130583	BacR-qPCR	79.0		P	50 - 175
2132982	BacR-qPCR	68.7	60.9	P/P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P372664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129293	DG3-qPCR	125		P	50 - 175
2129294	DG3-qPCR	127		P	50 - 175
2129295	DG3-qPCR	128	118	P/P	50 - 175
2129393	DG3-qPCR	111		P	50 - 175
2129394	DG3-qPCR	108		P	50 - 175
2129915	DG3-qPCR	127		P	50 - 175
2129917	DG3-qPCR	130		P	50 - 175
2130153	DG3-qPCR	134		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P372898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130156	DG3-qPCR	83.2		P	50 - 175
2130581	DG3-qPCR	71.3		P	50 - 175
2130582	DG3-qPCR	77.3		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P372898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130583	DG3-qPCR	74.6		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.3
Batch ID: P373574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132982	GFD-purified-qPCR	0.932	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P372898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132982	BacR-qPCR	12.0	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P372664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129295	DG3-qPCR	8.21	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2130153
Field Sample ID: G4NW0415

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	115	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	99.2	P	50 - 300

Lab Sample ID: 2130154
Field Sample ID: G4NW0430

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.5	P	50 - 300

Lab Sample ID: 2130155
Field Sample ID: G4NW0492

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 2130155
 Field Sample ID: G4NW0492

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.8	P	50 - 300

Lab Sample ID: 2130156
 Field Sample ID: G5NW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	101	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	156	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	95.4	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	88.4	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	110							
SOP-PCR-1.0	HF183-qPCR	182	95.7	142	121	133			
				121					
	HF183-qPCR	152	79.3	110	105	97.8			
				108					
SOP-PCR-1.2	GULL2-qPCR	161	93.5	91.4	81.3	99.0			
	GULL2-qPCR	288	75.8	68.4	61.6	57.3			
				21.2					
SOP-PCR-1.3	GFD-purified-qPCR	424	109	258	261	208		0.932	
				281					
SOP-PCR-1.4	BacR-qPCR	323	66.5	97.0	83.1	69.2			
				63.8					
	BacR-qPCR	304	117	90.3	103	70.1		12.0	
				98.2					
SOP-PCR-1.5	DG3-qPCR	226	136	125	127	128		8.21	
				118					
	DG3-qPCR	249	94.7	83.2	71.3	77.3			
				74.6					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E71969	Enterococci by Enterolert/QT by UWF in Pensacola	2130149
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2130144, 2130145, 2130146
SM 9223 B Quanti-Tray / E71969	E. coli by Colilert-18/QT by UWF in Pensacola	2130147, 2130148, 2130150, 2130151, 2130152
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2130153, 2130154, 2130155, 2130156
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2130153, 2130156
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2130153, 2130156
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2130153, 2130156
SOP-PCR-1.5 / E31780	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2130153, 2130156

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	10/21/2019	10/21/2019 13:40		10/22/2019 14:15	UWF Lab	2130149
SM 10200 H (mod.)	10/22/2019	10/22/2019 14:44	Yuliya Danyuk	10/30/2019 16:13	Carina A. Tull	2130144, 2130145, 2130146
SM 9223 B Quanti-Tray	10/21/2019	10/21/2019 14:20		10/22/2019 11:56	UWF Lab	2130147, 2130148, 2130150, 2130151, 2130152
SOP-PCR-1.0	10/22/2019	10/22/2019 13:40	Angela Smith	11/06/2019 15:24	Lauren Campbell	2130153, 2130154, 2130155
	10/22/2019	10/22/2019 13:40	Angela Smith	11/12/2019 11:27	Lauren Campbell	2130156
SOP-PCR-1.2	10/22/2019	10/22/2019 13:40	Angela Smith	11/13/2019 10:09	Mailin Lopez	2130153
	10/22/2019	10/22/2019 13:40	Angela Smith	11/18/2019 12:41	Mailin Lopez	2130156
SOP-PCR-1.3	10/22/2019	10/22/2019 13:40	Angela Smith	11/18/2019 08:37	Mailin Lopez	2130153, 2130156
SOP-PCR-1.4	10/22/2019	10/22/2019 13:40	Angela Smith	11/07/2019 15:52	Lauren Campbell	2130153
	10/22/2019	10/22/2019 13:40	Angela Smith	11/13/2019 14:38	Lauren Campbell	2130156
SOP-PCR-1.5	10/22/2019	10/22/2019 13:40	Angela Smith	11/07/2019 14:23	Lauren Campbell	2130153
	10/22/2019	10/22/2019 13:40	Angela Smith	11/14/2019 08:31	Mailin Lopez	2130156