

Biological Analysis Report

TLH-ROC-2022-10-24-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 18**
Request ID: **RQ-2022-10-24-25**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

For additional information please contact
Cheryl Swanson - Administrator
Sarah Menz, Ph.D. - Bench Biology & Aquatic
Toxicity
Puja Jasrotia, Ph.D. - Molecular Biology & Taxonomy
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 08-DEC-2022 12:29



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, Microbiology and Molecular.

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: Lake Kinsale

Collection Date/Time: 10/24/2022 09:05

Field ID: G1TLHR0148

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364446	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	39.7	A	MPN/100 mL	P421581	

Sample Location: Lewis Creek upstream Hwy157

Collection Date/Time: 10/24/2022 09:40

Field ID: G1TLHR0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364442	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.91	I	ug/L	P421490	
		Phaeophytin-a	0.90	U	ug/L	P421490	
		Chlorophyll-a, Uncorrected	1.5	I	ug/L	P421490	
2364448	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	139.1		MPN/100 mL	P421581	

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: Hurricane Creek upstream Lake Tallavana

Collection Date/Time: 10/24/2022 10:20

Field ID: G1TLHR0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364443	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.8	A	ug/L	P421490	
		Phaeophytin-a	2.2	I	ug/L	P421490	
		Chlorophyll-a, Uncorrected	11	A	ug/L	P421490	
2364449	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	816.4		MPN/100 mL	P421581	
2364454	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P421087	RPD
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P421087	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P421087	LCS

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 2.2 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: Lake Tallavana Outlet

Collection Date/Time: 10/24/2022 10:45

Field ID: G1TLHR0164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364453	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	J	MPN/100 mL	P421581	

Ref. Method and Comment:

SM 9223 B Quanti-Tray: All Quanti-Tray wells were positive. Result may be higher than reported.

Sample Location: Beaver Creek

Collection Date/Time: 10/24/2022 11:20

Field ID: G1TLHR0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364444	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.0		ug/L	P421490	
		Phaeophytin-a	1.8	I	ug/L	P421490	
		Chlorophyll-a, Uncorrected	6.3		ug/L	P421490	
2364450	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	1050.0		MPN/100 mL	P421581	

Field ID: G1TLHR0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364455	SOP-PCR-1.0	HF183-purified-qPCR**	550	UJ	TSC/100 mL	P422389	LCS, SUR
	SOP-PCR-1.2	GULL2-purified-qPCR**	600	UJ	TSC/100 mL	P422389	LCS, SUR
	SOP-PCR-1.3	GFD-purified-qPCR**	290	IJ	TSC/100 mL	P422389	LCS, SUR
	SOP-PCR-1.4	BacR-purified-qPCR**	510	UJ	TSC/100 mL	P422389	LCS, SUR
	SOP-PCR-1.5	DG3-purified-qPCR**	430	UJ	TSC/100 mL	P422389	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: Precision data unavailable for HF183-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.2: Precision data unavailable for GULL2-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

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

SOP-PCR-1.4: Precision data unavailable for BacR-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.5: Precision data unavailable for DG3-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Double Branch Upstream SR270

Collection Date/Time: 10/24/2022 11:40

Field ID: G1TLHR0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364447	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	816.0		MPN/100 mL	P421581	

Sample Location: Hurricane Creek upstream US90

Collection Date/Time: 10/24/2022 12:00

Field ID: G1TLHR0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364445	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.95	I	ug/L	P421490	
		Phaeophytin-a	0.90	U	ug/L	P421490	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P421490	
2364451	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	1723.0		MPN/100 mL	P421581	
2364456	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P421087	RPD
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.3	GFD-qPCR**	510	I	TSC/100 mL	P421087	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P421087	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.

Sample Location: Richlander Creek upstream Hwy65B

Collection Date/Time: 10/24/2022 12:55

Field ID: G1TLHR0162

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364452	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	231.0		MPN/100 mL	P421581	
2364457	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P421087	RPD
	SOP-PCR-1.2	GULL2-qPCR**	3.6E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.3	GFD-qPCR**	720	U	TSC/100 mL	P421087	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P421087	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P421087	LCS

Quality Assurance Report

Method Blank Results

Quality Assurance Report

Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P421490

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: SM 9223 B Quanti-Tray
Batch ID: P421581

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Reference Method: SOP-PCR-1.0
Batch ID: P421087

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

Reference Method: SOP-PCR-1.0
Batch ID: P422389

Component	Result	Code	Units
HF183-purified-qPCR	550	U	TSC/100 mL

Reference Method: SOP-PCR-1.2
Batch ID: P421087

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

Reference Method: SOP-PCR-1.2
Batch ID: P422389

Component	Result	Code	Units
GULL2-purified-qPCR	600	U	TSC/100 mL

Reference Method: SOP-PCR-1.3
Batch ID: P421087

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

Reference Method: SOP-PCR-1.3
Batch ID: P422389

Component	Result	Code	Units
GFD-purified-qPCR	120	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P421087

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.4
Batch ID: P422389

Component	Result	Code	Units
BacR-purified-qPCR	510	U	TSC/100 mL

Reference Method: SOP-PCR-1.5
Batch ID: P421087

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

Reference Method: SOP-PCR-1.5
Batch ID: P422389

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: P421490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.0		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	80.4	107	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P422389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	91.3	7.71	P/F	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	102	89.4	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P422389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-purified-qPCR	95.1	6.13	P/F	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.3
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	94.2	95.1	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P422389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	98.6	7.38	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	117	77.7	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P422389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-purified-qPCR	108	3.71	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P421087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	108	40.8	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P422389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-purified-qPCR	99.9	4.12	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363457	HF183-qPCR	115	88.1	P/P	50 - 175
2363458	HF183-qPCR	88.2		P	50 - 175
2363459	HF183-qPCR	90.2		P	50 - 175
2363460	HF183-qPCR	95.4		P	50 - 175
2363461	HF183-qPCR	95.6		P	50 - 175
2364454	HF183-qPCR	76.0		P	50 - 175
2364456	HF183-qPCR	83.3		P	50 - 175
2364457	HF183-qPCR	78.3		P	50 - 175
2364532	HF183-qPCR	91.8		P	50 - 175
2364533	HF183-qPCR	95.3		P	50 - 175
2364534	HF183-qPCR	90.4		P	50 - 175
2364888	HF183-qPCR	92.5		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P422389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364455	HF183-purified-qPCR	95.2		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363457	GULL2-qPCR	73.1	87.0	P/P	50 - 300
2363458	GULL2-qPCR	70.3		P	50 - 300
2363459	GULL2-qPCR	85.4		P	50 - 300
2363460	GULL2-qPCR	98.8		P	50 - 300
2363461	GULL2-qPCR	78.8		P	50 - 300
2364454	GULL2-qPCR	66.9		P	50 - 300
2364456	GULL2-qPCR	91.6		P	50 - 300
2364457	GULL2-qPCR	84.0		P	50 - 300
2364532	GULL2-qPCR	66.8		P	50 - 300
2364533	GULL2-qPCR	78.9		P	50 - 300
2364534	GULL2-qPCR	76.9		P	50 - 300

Reference Method: SOP-PCR-1.2

Batch ID: P422389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364455	GULL2-purified-qPCR	102		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363457	GFD-qPCR	102	103	P/P	50 - 175
2363458	GFD-qPCR	107		P	50 - 175
2363459	GFD-qPCR	112		P	50 - 175
2363460	GFD-qPCR	99.9		P	50 - 175
2363461	GFD-qPCR	95.5		P	50 - 175
2364454	GFD-qPCR	92.2		P	50 - 175
2364456	GFD-qPCR	99.4		P	50 - 175
2364457	GFD-qPCR	94.9		P	50 - 175
2364532	GFD-qPCR	112		P	50 - 175
2364533	GFD-qPCR	114		P	50 - 175
2364534	GFD-qPCR	103		P	50 - 175

Reference Method: SOP-PCR-1.3

Batch ID: P422389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364455	GFD-purified-qPCR	102		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363457	BacR-qPCR	111	105	P/P	50 - 175
2363458	BacR-qPCR	102		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4

Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363459	BacR-qPCR	103		P	50 - 175
2363460	BacR-qPCR	97.3		P	50 - 175
2363461	BacR-qPCR	87.6		P	50 - 175
2364454	BacR-qPCR	76.4		P	50 - 175
2364456	BacR-qPCR	91.7		P	50 - 175
2364457	BacR-qPCR	81.8		P	50 - 175
2364532	BacR-qPCR	95.2		P	50 - 175
2364533	BacR-qPCR	96.1		P	50 - 175
2364534	BacR-qPCR	85.4		P	50 - 175
2364888	BacR-qPCR	84.2		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P422389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364455	BacR-purified-qPCR	105		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P421087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363457	DG3-qPCR	97.3	98.8	P/P	50 - 175
2363458	DG3-qPCR	93.5		P	50 - 175
2363459	DG3-qPCR	98.2		P	50 - 175
2363460	DG3-qPCR	101		P	50 - 175
2363461	DG3-qPCR	97.1		P	50 - 175
2364454	DG3-qPCR	94.0		P	50 - 175
2364456	DG3-qPCR	95.3		P	50 - 175
2364457	DG3-qPCR	98.6		P	50 - 175
2364532	DG3-qPCR	90.5		P	50 - 175
2364533	DG3-qPCR	97.4		P	50 - 175
2364534	DG3-qPCR	101		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P422389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364455	DG3-purified-qPCR	101		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)

Batch ID: P421490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364443	Chlorophyll-a, Corrected	0.784	Sample	P	0 - 25
2364443	Chlorophyll-a, Uncorrected	0.480	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P421087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363457	HF183-qPCR	26.6	Spike	F	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P421087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363457	GULL2-qPCR	17.4	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P421087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363457	GFD-qPCR	0.510	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P421087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363457	BacR-qPCR	5.31	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P421087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363457	DG3-qPCR	1.58	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2364454
Field Sample ID: G1TLHR0160

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	92.1	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	89.2	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	87.0	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	98.5	P	50 - 300

Lab Sample ID: 2364455
Field Sample ID: G1TLHR0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
------------------	-----------	--------	-----------	----------------

Quality Assurance Report Surrogates

Lab Sample ID: 2364455

Field Sample ID: G1TLHR0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	8.67	F	50 - 300
SOP-PCR-1.2	SKETA-qPCR	11.5	F	30 - 300
SOP-PCR-1.3	SKETA-qPCR	11.5	F	30 - 300
SOP-PCR-1.4	SKETA-qPCR	10.4	F	30 - 300
SOP-PCR-1.5	SKETA-qPCR	8.43	F	50 - 300

Lab Sample ID: 2364456

Field Sample ID: G1TLHR0161

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	89.4	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	97.3	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	94.0	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	101	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	92.5	P	50 - 300

Lab Sample ID: 2364457

Field Sample ID: G1TLHR0162

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	96.6	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	100	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	104	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	96.0						0.784	
	Chlorophyll-a, Uncorrected							0.480	
SOP-PCR-1.0	HF183-purified-qPCR	7.71	91.3	95.2					
	HF183-qPCR	107	80.4	90.2	95.4	95.6			26.6
SOP-PCR-1.2	GULL2-purified-qPCR	6.13	95.1	102					
	GULL2-qPCR	89.4	102	73.1	87.0	70.3			17.4
SOP-PCR-1.3	GFD-purified-qPCR	7.38	98.6	102					
	GFD-qPCR	95.1	94.2	94.9	112	114			0.510
SOP-PCR-1.4	BacR-purified-qPCR	3.71	108	105					
	BacR-qPCR	77.7	117	111	105	102			5.31
SOP-PCR-1.5	DG3-purified-qPCR	4.12	99.9	101					
	DG3-qPCR	40.8	108	97.4	101	97.3			1.58

Reference Method Descriptions

Method	Description	Associated Samples
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2364442, 2364443, 2364444, 2364445
SM 9223 B Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2364446, 2364447, 2364448, 2364449, 2364450, 2364451, 2364452, 2364453
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2364454, 2364456, 2364457
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2364455
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2364454, 2364456, 2364457
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2364455
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2364455
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2364454, 2364456, 2364457
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2364454, 2364456, 2364457
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2364455
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2364454, 2364456, 2364457
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2364455

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	10/24/2022	10/24/2022 15:18	Carina A. Tull	10/25/2022 14:15	Megan Higbee	2364442, 2364443, 2364444, 2364445
SM 9223 B Quanti-Tray	10/24/2022	10/24/2022 15:21	Callie Williams	10/25/2022 11:08	Callie Williams	2364446, 2364447, 2364448, 2364449, 2364450, 2364451, 2364452, 2364453
SOP-PCR-1.0	10/24/2022	10/24/2022 15:15	Claudia Castro	10/28/2022 10:06	Roberta Tatti	2364454, 2364456, 2364457
SOP-PCR-1.2	10/24/2022	10/24/2022 15:15	Roberta Tatti	11/21/2022 09:34	Roberta Tatti	2364455
	10/24/2022	10/24/2022 15:15	Claudia Castro	11/14/2022 14:10	Roberta Tatti	2364454, 2364456, 2364457
SOP-PCR-1.3	10/24/2022	10/24/2022 15:15	Roberta Tatti	11/22/2022 09:28	Roberta Tatti	2364455
	10/24/2022	10/24/2022 15:15	Claudia Castro	11/15/2022 10:19	Roberta Tatti	2364454, 2364456, 2364457
SOP-PCR-1.4	10/24/2022	10/24/2022 15:15	Roberta Tatti	11/22/2022 14:20	Roberta Tatti	2364455
	10/24/2022	10/24/2022 15:15	Claudia Castro	11/14/2022 09:06	Roberta Tatti	2364454, 2364456, 2364457
SOP-PCR-1.5	10/24/2022	10/24/2022 15:15	Roberta Tatti	11/21/2022 10:34	Roberta Tatti	2364455
	10/24/2022	10/24/2022 15:15	Claudia Castro	11/14/2022 11:24	DeAsia Armster	2364454, 2364456, 2364457
	10/24/2022	10/24/2022 15:15	Roberta Tatti	11/21/2022 13:55	Roberta Tatti	2364455