

Biological Analysis Report

TLH-ROC-2022-01-24-01

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

Event Description: **Run 16**
Request ID: **RQ-2022-01-17-48**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 11-MAR-2022 17:38



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: Gilberts Mill Creek @ Woodrest Rd

Collection Date/Time: 01/24/2022 13:05

Field ID: G3TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301264	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4	I	ug/L	P409264	
		Phaeophytin-a	0.90	U	ug/L	P409264	
		Chlorophyll-a, Uncorrected	2.7		ug/L	P409264	
2301269	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	613.1		MPN/100 mL	P409025	

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: Gilberts Mill Creek @ Aycock Rd

Collection Date/Time: 01/24/2022 13:30

Field ID: G3TLHR0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301268	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	307.6		MPN/100 mL	P409025	

Sample Location: MARSHALL CREEK @ SR2

Collection Date/Time: 01/24/2022 11:30

Field ID: G2TLHR0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301263	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P409264	
		Phaeophytin-a	1.1	U	ug/L	P409264	
		Chlorophyll-a, Uncorrected	1.5	I	ug/L	P409264	
2301267	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	317.0		MPN/100 mL	P409025	

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: Scurlock Creek @ Pigrim Rd

Collection Date/Time: 01/24/2022 12:05

Field ID: G3TLHR0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301266	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6	I	ug/L	P409264	
		Phaeophytin-a	1.8	U	ug/L	P409264	
		Chlorophyll-a, Uncorrected	2.3	I	ug/L	P409264	
2301271	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	228.2		MPN/100 mL	P409025	
2301272	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P408621	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P408621	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P408621	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P408621	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P408621	

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: FB_01242022

Collection Date/Time: 01/24/2022 12:15

Field ID: FB_01242022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301273	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P408914	

Field ID: FB_01242022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301273	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P408914	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P408914	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P408914	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P408914	LCS

Sample Location: Pine Barn Creek @ Woodrest Rd

Collection Date/Time: 01/24/2022 12:45

Field ID: G3TLHR0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2301265	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8		ug/L	P409264	
		Phaeophytin-a	0.90	U	ug/L	P409264	
		Chlorophyll-a, Uncorrected	2.9		ug/L	P409264	
2301270	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	37.9		MPN/100 mL	P409025	

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.

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P409264

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: P409025

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

Reference Method: SOP-PCR-1.0

Batch ID: P408621

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

Reference Method: SOP-PCR-1.0

Batch ID: P408914

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

Reference Method: SOP-PCR-1.2

Batch ID: P408621

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.2
Batch ID: P408914

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

Reference Method: SOP-PCR-1.3
Batch ID: P408621

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

Reference Method: SOP-PCR-1.3
Batch ID: P408914

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

Reference Method: SOP-PCR-1.4
Batch ID: P408621

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

Reference Method: SOP-PCR-1.4
Batch ID: P408914

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

Reference Method: SOP-PCR-1.5
Batch ID: P408621

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

Reference Method: SOP-PCR-1.5
Batch ID: P408914

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: P409264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.5		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P408621

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: P408621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	79.6	68.4	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P408914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	87.0	89.0	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P408621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	75.1	94.9	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P408914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	87.8	83.0	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P408621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	81.5	71.3	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P408914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	70.1	88.6	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P408621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	73.6	78.5	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P408914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	86.9	61.4	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P408621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	80.1	85.9	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P408914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	79.3	40.7	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300068	HF183-qPCR	73.7	78.7	P	50 - 175
2300308	HF183-qPCR	76.6		P	50 - 175
2300309	HF183-qPCR	74.1		P	50 - 175
2300310	HF183-qPCR	86.0		P/P	50 - 175
2300311	HF183-qPCR	69.4		P	50 - 175
2300477	HF183-qPCR	73.9		P	50 - 175
2300698	HF183-qPCR	78.9		P	50 - 175
2300699	HF183-qPCR	72.8		P	50 - 175
2300891	HF183-qPCR	76.7		P	50 - 175
2300892	HF183-qPCR	73.3		P	50 - 175
2300977	HF183-qPCR	82.7		P	50 - 175
2301014	HF183-qPCR	72.6		P	50 - 175
2301272	HF183-qPCR	75.5		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301273	HF183-qPCR	84.7	78.1	P/P	50 - 175
2301313	HF183-qPCR	91.7		P	50 - 175
2301314	HF183-qPCR	81.8		P	50 - 175
2301315	HF183-qPCR	85.1		P	50 - 175
2301316	HF183-qPCR	82.3		P	50 - 175
2301317	HF183-qPCR	83.4		P	50 - 175
2301686	HF183-qPCR	97.9		P	50 - 175
2301687	HF183-qPCR	84.1		P	50 - 175
2302275	HF183-qPCR	82.6		P	50 - 175
2302714	HF183-qPCR	103		P	50 - 175
2302715	HF183-qPCR	101		P	50 - 175
2302732	HF183-qPCR	83.5		P	50 - 175
2303015	HF183-qPCR	93.0		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300068	GULL2-qPCR	95.0	72.0	P	50 - 300
2300308	GULL2-qPCR	94.0		P	50 - 300
2300309	GULL2-qPCR	92.3		P	50 - 300
2300310	GULL2-qPCR	70.2		P/P	50 - 300
2300311	GULL2-qPCR	67.7		P	50 - 300
2300698	GULL2-qPCR	92.1		P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2

Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300699	GULL2-qPCR	69.7		P	50 - 300
2300977	GULL2-qPCR	78.2		P	50 - 300
2301014	GULL2-qPCR	80.7		P	50 - 300
2301272	GULL2-qPCR	77.7		P	50 - 300

Reference Method: SOP-PCR-1.2

Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301273	GULL2-qPCR	92.2	90.0	P/P	50 - 300
2301316	GULL2-qPCR	85.0		P	50 - 300
2301686	GULL2-qPCR	93.1		P	50 - 300
2301687	GULL2-qPCR	90.2		P	50 - 300
2302275	GULL2-qPCR	77.1		P	50 - 300
2302714	GULL2-qPCR	61.6		P	50 - 300
2302715	GULL2-qPCR	82.9		P	50 - 300
2303015	GULL2-qPCR	68.6		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300068	GFD-qPCR	110		P	50 - 175
2300308	GFD-qPCR	102		P	50 - 175
2300309	GFD-qPCR	101		P	50 - 175
2300310	GFD-qPCR	123	114	P/P	50 - 175
2300311	GFD-qPCR	111		P	50 - 175
2300698	GFD-qPCR	98.8		P	50 - 175
2300699	GFD-qPCR	101		P	50 - 175
2300977	GFD-qPCR	105		P	50 - 175
2301014	GFD-qPCR	84.7		P	50 - 175
2301272	GFD-qPCR	93.6		P	50 - 175

Reference Method: SOP-PCR-1.3

Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301273	GFD-qPCR	83.1	82.9	P/P	50 - 175
2301316	GFD-qPCR	93.3		P	50 - 175
2301686	GFD-qPCR	108		P	50 - 175
2301687	GFD-qPCR	103		P	50 - 175
2302275	GFD-qPCR	95.3		P	50 - 175
2302714	GFD-qPCR	119		P	50 - 175
2302715	GFD-qPCR	118		P	50 - 175
2303015	GFD-qPCR	113		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300068	BacR-qPCR	57.0	57.0	P/P	50 - 175
2300308	BacR-qPCR	64.8	64.8	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4

Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300309	BacR-qPCR	71.5	71.5	P/P	50 - 175
2300310	BacR-qPCR	51.8	53.2	P/P	50 - 175
2300311	BacR-qPCR	57.8	57.8	P/P	50 - 175
2300477	BacR-qPCR	68.9	68.9	P/P	50 - 175
2300698	BacR-qPCR	68.1	68.1	P/P	50 - 175
2300699	BacR-qPCR	59.3	59.3	P/P	50 - 175
2300891	BacR-qPCR	53.4	53.4	P/P	50 - 175
2300892	BacR-qPCR	52.1	52.1	P/P	50 - 175
2300977	BacR-qPCR	65.6	65.6	P/P	50 - 175
2301014	BacR-qPCR	50.7	50.7	P/P	50 - 175
2301272	BacR-qPCR	62.9	62.9	P/P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301273	BacR-qPCR	76.2	76.9	P/P	50 - 175
2301313	BacR-qPCR	63.5		P	50 - 175
2301314	BacR-qPCR	63.8		P	50 - 175
2301315	BacR-qPCR	65.7		P	50 - 175
2301316	BacR-qPCR	73.1		P	50 - 175
2301317	BacR-qPCR	76.4		P	50 - 175
2301686	BacR-qPCR	57.3		P	50 - 175
2301687	BacR-qPCR	62.3		P	50 - 175
2302275	BacR-qPCR	65.0		P	50 - 175
2302714	BacR-qPCR	64.6		P	50 - 175
2302715	BacR-qPCR	73.7		P	50 - 175
2302732	BacR-qPCR	76.2		P	50 - 175
2303015	BacR-qPCR	58.7		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P408621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300068	DG3-qPCR	102		P	50 - 175
2300308	DG3-qPCR	93.1		P	50 - 175
2300309	DG3-qPCR	91.9		P	50 - 175
2300310	DG3-qPCR	107	106	P/P	50 - 175
2300311	DG3-qPCR	103		P	50 - 175
2300477	DG3-qPCR	90.1		P	50 - 175
2300698	DG3-qPCR	92.6		P	50 - 175
2300699	DG3-qPCR	103		P	50 - 175
2300891	DG3-qPCR	86.9		P	50 - 175
2300892	DG3-qPCR	87.1		P	50 - 175
2300977	DG3-qPCR	92.3		P	50 - 175
2301014	DG3-qPCR	86.8		P	50 - 175
2301272	DG3-qPCR	80.1		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P408914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301273	DG3-qPCR	74.4	69.8	P/P	50 - 175
2301313	DG3-qPCR	57.5		P	50 - 175
2301314	DG3-qPCR	64.6		P	50 - 175
2301315	DG3-qPCR	66.9		P	50 - 175
2301316	DG3-qPCR	74.1		P	50 - 175
2301317	DG3-qPCR	75.2		P	50 - 175
2301686	DG3-qPCR	61.7		P	50 - 175
2301687	DG3-qPCR	68.1		P	50 - 175
2302275	DG3-qPCR	65.1		P	50 - 175
2302714	DG3-qPCR	51.0		P	50 - 175
2302715	DG3-qPCR	65.4		P	50 - 175
2302732	DG3-qPCR	70.2		P	50 - 175
2303015	DG3-qPCR	55.2		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 9223 B Quanti-Tray
Batch ID: P409025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301312	Escherichia Coli-Quanti-Tray	11.4	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P408621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300310	HF183-qPCR	8.87	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P408914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301273	HF183-qPCR	8.14	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P408621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300310	GULL2-qPCR	2.57	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P408914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301273	GULL2-qPCR	2.42	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.3
 Batch ID: P408621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300310	GFD-qPCR	7.36	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P408914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301273	GFD-qPCR	0.252	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P408621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300310	BacR-qPCR	2.72	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P408914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301273	BacR-qPCR	0.948	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
 Batch ID: P408621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300310	DG3-qPCR	0.907	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
 Batch ID: P408914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301273	DG3-qPCR	6.50	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2301272
 Field Sample ID: G3TLHR0046

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	75.2	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	87.8	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	80.0	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 2301272
 Field Sample ID: G3TLHR0046

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.4	SKETA-qPCR	77.4	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	86.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	75.8	P	50 - 300

Lab Sample ID: 2301273
 Field Sample ID: FB_01242022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	67.2	P	50 - 300
SOP-PCR-1.0	SKETA-qPCR	64.9	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	57.2	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	56.1	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	63.3	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	59.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	59.9	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	57.7	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	60.8	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	58.5	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	95.5							
SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray							11.4	
SOP-PCR-1.0	HF183-qPCR	68.4	79.6	73.7	76.6	74.1			8.87
	HF183-qPCR	89.0	87.0	101	83.5	93.0			8.14
SOP-PCR-1.2	GULL2-qPCR	94.9	75.1	95.0	94.0	92.3			2.57
	GULL2-qPCR	83.0	87.8	77.1	61.6	82.9			2.42
SOP-PCR-1.3	GFD-qPCR	71.3	81.5	110	102	101			7.36
	GFD-qPCR	88.6	70.1	83.1	82.9	93.3			0.252
SOP-PCR-1.4	BacR-qPCR	78.5	73.6	57.0	64.8	71.5			2.72
	BacR-qPCR	61.4	86.9	76.2	76.9	63.5			0.948
SOP-PCR-1.5	DG3-qPCR	85.9	80.1	102	93.1	91.9			0.907
	DG3-qPCR	40.7	79.3	74.4	69.8	57.5			6.50

Reference Method Descriptions

Method	Description	Associated Samples
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2301263, 2301264, 2301265, 2301266

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 9223 B Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2301267, 2301268, 2301269, 2301270, 2301271
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2301272, 2301273
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2301272, 2301273
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2301272, 2301273
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2301272, 2301273
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2301272, 2301273

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/24/2022	01/25/2022 14:45	Ethan Wickline	01/31/2022 10:20	Joel Wharton	2301263, 2301264, 2301265, 2301266
SM 9223 B Quanti-Tray	01/24/2022	01/24/2022 17:14	Caitlyn Owens	01/25/2022 12:57	Tynan A Branch	2301267, 2301268, 2301269, 2301270, 2301271
SOP-PCR-1.0	01/24/2022	01/25/2022 13:50	Luke Hudson	02/04/2022 11:18	DeAsia Armster	2301272
	01/24/2022	01/25/2022 13:50	Luke Hudson	02/23/2022 14:18	DeAsia Armster	2301273
SOP-PCR-1.2	01/24/2022	01/25/2022 13:50	Luke Hudson	02/18/2022 09:17	DeAsia Armster	2301272
	01/24/2022	01/25/2022 13:50	Luke Hudson	03/04/2022 12:05	DeAsia Armster	2301273
SOP-PCR-1.3	01/24/2022	01/25/2022 13:50	Luke Hudson	02/22/2022 09:35	DeAsia Armster	2301272
	01/24/2022	01/25/2022 13:50	Luke Hudson	03/07/2022 10:16	DeAsia Armster	2301273
SOP-PCR-1.4	01/24/2022	01/25/2022 13:50	Luke Hudson	02/14/2022 09:14	DeAsia Armster	2301272
	01/24/2022	01/25/2022 13:50	Luke Hudson	03/01/2022 15:10	DeAsia Armster	2301273
SOP-PCR-1.5	01/24/2022	01/25/2022 13:50	Luke Hudson	02/23/2022 09:46	DeAsia Armster	2301272
	01/24/2022	01/25/2022 13:50	Luke Hudson	03/03/2022 09:56	DeAsia Armster	2301273