

Biological Analysis Report

SO-DIST-2021-07-14-01

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

Overflow Analyses Performed By:
Sanders Laboratories
10090 Bavaria Road
Ft. Myers, FL 33913
DOH Accreditation E85457

Event Description: **2021 SMP: Billy Creek**
Request ID: **RQ-2021-07-12-48**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Puja Jasrotia, Environmental Administrator

Date Certified: 19-AUG-2021 14:46



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: Billy Creek @ Seaboard St.

Collection Date/Time: 07/13/2021 09:45

Field ID: G3SD0203

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262190	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400813	LCS
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.3	GFD-qPCR**	640	I	TSC/100 mL	P400813	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400813	
2262196	Colilert-18	Escherichia Coli-Quanti-Tray	111		MPN/100 mL		
2262202	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	687		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Gull2-qPCR component.

SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Sample Location: Billy Crk @Shady Oaks Brdwk

Collection Date/Time: 07/13/2021 10:10

Field ID: G3SD0196

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262191	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400813	LCS
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P400813	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400813	
2262197	Colilert-18	Escherichia Coli-Quanti-Tray	185		MPN/100 mL		
2262203	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	921		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Gull2-qPCR component.

SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Sample Location: Billy Creek @ VSShoemaker

Collection Date/Time: 07/13/2021 10:40

Field ID: G3SD0197

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262192	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400813	LCS
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.3	GFD-qPCR**	830	I	TSC/100 mL	P400813	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400813	
2262198	Colilert-18	Escherichia Coli-Quanti-Tray	116		MPN/100 mL		
2262204	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	1300		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Gull2-qPCR component.

SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Sample Location: Billy Creek @ Arnold Dr.

Collection Date/Time: 07/13/2021 11:00

Field ID: G3SD0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262193	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400813	LCS
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400813	

Field ID: G3SD0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262193	SOP-PCR-1.3	GFD-qPCR**	720	I	TSC/100 mL	P400813	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400813	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400813	
2262199	Colilert-18	Escherichia Coli-Quanti-Tray	160		MPN/100 mL		
2262205	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	579		MPN/100 mL		

Ref. Method and Comment:
 SOP-PCR-1.2: Precision data unavailable for Gull2-qPCR component.
 SOP-PCR-1.3: Precision data unavailable for GFD-qPCR component.

Sample Location: Billy Creek Upstrm of Marsh

Collection Date/Time: 07/13/2021 11:25

Field ID: G3SD0199

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262194	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.3	GFD-qPCR**	1.3E+03	I	TSC/100 mL	P400964	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400964	
2262200	Colilert-18	Escherichia Coli-Quanti-Tray	236		MPN/100 mL		
2262206	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	2420		MPN/100 mL		

Sample Location: Billy Creek @ Ortiz Ave.

Collection Date/Time: 07/13/2021 11:55

Field ID: G3SD0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262195	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.3	GFD-qPCR**	1.3E+03	I	TSC/100 mL	P400964	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P400964	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P400964	
2262201	Colilert-18	Escherichia Coli-Quanti-Tray	242		MPN/100 mL		
2262207	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	1840		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
 Batch ID: P400813

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

Reference Method: SOP-PCR-1.0
 Batch ID: P400964

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.2
Batch ID: P400813

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

Reference Method: SOP-PCR-1.2
Batch ID: P400964

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

Reference Method: SOP-PCR-1.3
Batch ID: P400813

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

Reference Method: SOP-PCR-1.3
Batch ID: P400964

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

Reference Method: SOP-PCR-1.4
Batch ID: P400813

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

Reference Method: SOP-PCR-1.4
Batch ID: P400964

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

Reference Method: SOP-PCR-1.5
Batch ID: P400813

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

Reference Method: SOP-PCR-1.5
Batch ID: P400964

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: P400813

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: P400813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	79.3	282	P/F	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P400964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	99.8	82.6	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P400813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	101	162	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P400964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	105	109	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P400813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	71.8	169	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P400964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	97.6	112	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P400813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	73.2	72.2	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P400964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	89.8	127	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P400813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	105	84.5	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P400964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	58.5	100	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261283	HF183-qPCR	83.4	82.2	P	50 - 175
2261284	HF183-qPCR	83.7		P	50 - 175
2261529	HF183-qPCR	94.9		P	50 - 175
2261530	HF183-qPCR	75.8		P	50 - 175
2261607	HF183-qPCR	76.3		P/P	50 - 175
2261797	HF183-qPCR	84.7		P	50 - 175
2261798	HF183-qPCR	79.7		P	50 - 175
2261799	HF183-qPCR	87.1		P	50 - 175
2262190	HF183-qPCR	98.2		P	50 - 175
2262191	HF183-qPCR	84.5		P	50 - 175
2262192	HF183-qPCR	76.7		P	50 - 175
2262193	HF183-qPCR	71.3		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262194	HF183-qPCR	81.6	79.8	P	50 - 175
2262195	HF183-qPCR	84.3		P	50 - 175
2262290	HF183-qPCR	69.4		P/P	50 - 175
2262362	HF183-qPCR	71.6		P	50 - 175
2262399	HF183-qPCR	78.7		P	50 - 175
2262439	HF183-qPCR	74.4		P	50 - 175
2262598	HF183-qPCR	76.4		P	50 - 175
2262633	HF183-qPCR	67.5		P	50 - 175
2262634	HF183-qPCR	79.1		P	50 - 175
2262771	HF183-qPCR	57.6		P	50 - 175
2262791	HF183-qPCR	76.3		P	50 - 175
2263296	HF183-qPCR	81.9		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261530	GULL2-qPCR	59.0		P	50 - 300
2261797	GULL2-qPCR	70.9		P	50 - 300
2261798	GULL2-qPCR	58.1		P	50 - 300
2261799	GULL2-qPCR	70.1		P	50 - 300
2262190	GULL2-qPCR	61.0		P	50 - 300
2262191	GULL2-qPCR	64.1		P	50 - 300
2262192	GULL2-qPCR	58.5		P	50 - 300
2262193	GULL2-qPCR	59.1		P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2

Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262194	GULL2-qPCR	68.6		P	50 - 300
2262195	GULL2-qPCR	75.0		P	50 - 300
2262290	GULL2-qPCR	102	83.9	P/P	50 - 300
2262362	GULL2-qPCR	53.8		P	50 - 300
2262439	GULL2-qPCR	62.8		P	50 - 300
2262598	GULL2-qPCR	74.5		P	50 - 300
2262633	GULL2-qPCR	61.7		P	50 - 300
2262634	GULL2-qPCR	71.2		P	50 - 300
2262771	GULL2-qPCR	71.3		P	50 - 300
2262791	GULL2-qPCR	66.1		P	50 - 300
2263296	GULL2-qPCR	67.1		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261530	GFD-qPCR	81.9		P	50 - 175
2261797	GFD-qPCR	91.7		P	50 - 175
2261798	GFD-qPCR	99.8		P	50 - 175
2261799	GFD-qPCR	101		P	50 - 175
2262190	GFD-qPCR	88.8		P	50 - 175
2262191	GFD-qPCR	83.1		P	50 - 175
2262192	GFD-qPCR	88.4		P	50 - 175
2262193	GFD-qPCR	80.0		P	50 - 175

Reference Method: SOP-PCR-1.3

Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262194	GFD-qPCR	98.4		P	50 - 175
2262195	GFD-qPCR	98.1		P	50 - 175
2262290	GFD-qPCR	100	105	P/P	50 - 175
2262362	GFD-qPCR	91.0		P	50 - 175
2262439	GFD-qPCR	88.2		P	50 - 175
2262598	GFD-qPCR	96.9		P	50 - 175
2262633	GFD-qPCR	97.0		P	50 - 175
2262634	GFD-qPCR	99.5		P	50 - 175
2262771	GFD-qPCR	93.9		P	50 - 175
2262791	GFD-qPCR	88.5		P	50 - 175
2263296	GFD-qPCR	94.4		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261283	BacR-qPCR	75.3		P	50 - 175
2261284	BacR-qPCR	68.2		P	50 - 175
2261529	BacR-qPCR	65.8		P	50 - 175
2261530	BacR-qPCR	63.4		P	50 - 175
2261607	BacR-qPCR	53.0	57.6	P/P	50 - 175
2261797	BacR-qPCR	73.4		P	50 - 175
2261798	BacR-qPCR	65.4		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4

Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261799	BacR-qPCR	70.9		P	50 - 175
2262190	BacR-qPCR	67.1		P	50 - 175
2262191	BacR-qPCR	70.0		P	50 - 175
2262192	BacR-qPCR	65.4		P	50 - 175
2262193	BacR-qPCR	73.8		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262194	BacR-qPCR	75.6		P	50 - 175
2262195	BacR-qPCR	71.7		P	50 - 175
2262290	BacR-qPCR	74.5	79.6	P/P	50 - 175
2262362	BacR-qPCR	60.2		P	50 - 175
2262399	BacR-qPCR	74.0		P	50 - 175
2262439	BacR-qPCR	56.9		P	50 - 175
2262598	BacR-qPCR	72.9		P	50 - 175
2262633	BacR-qPCR	64.7		P	50 - 175
2262634	BacR-qPCR	62.9		P	50 - 175
2262771	BacR-qPCR	63.1		P	50 - 175
2262791	BacR-qPCR	64.4		P	50 - 175
2263296	BacR-qPCR	64.8		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P400813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2261283	DG3-qPCR	92.2		P	50 - 175
2261284	DG3-qPCR	89.2		P	50 - 175
2261529	DG3-qPCR	62.5		P	50 - 175
2261530	DG3-qPCR	57.1		P	50 - 175
2261607	DG3-qPCR	73.7	70.5	P/P	50 - 175
2261797	DG3-qPCR	82.2		P	50 - 175
2261798	DG3-qPCR	81.3		P	50 - 175
2261799	DG3-qPCR	79.5		P	50 - 175
2262190	DG3-qPCR	80.6		P	50 - 175
2262191	DG3-qPCR	76.2		P	50 - 175
2262192	DG3-qPCR	78.0		P	50 - 175
2262193	DG3-qPCR	83.8		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262194	DG3-qPCR	77.3		P	50 - 175
2262195	DG3-qPCR	75.5		P	50 - 175
2262290	DG3-qPCR	75.5	73.5	P/P	50 - 175
2262362	DG3-qPCR	66.8		P	50 - 175
2262399	DG3-qPCR	82.8		P	50 - 175
2262439	DG3-qPCR	72.9		P	50 - 175
2262598	DG3-qPCR	71.6		P	50 - 175
2262633	DG3-qPCR	76.9		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P400964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262634	DG3-qPCR	69.6		P	50 - 175
2262771	DG3-qPCR	71.0		P	50 - 175
2262791	DG3-qPCR	71.5		P	50 - 175
2263296	DG3-qPCR	59.5		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P400813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2261607	HF183-qPCR	7.35	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P400964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262290	HF183-qPCR	13.9	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P400964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262290	GULL2-qPCR	19.9	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P400964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262290	GFD-qPCR	5.34	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P400813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2261607	BacR-qPCR	8.43	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P400964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262290	BacR-qPCR	6.69	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.5

Batch ID: P400813

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2261607	DG3-qPCR	4.47	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5

Batch ID: P400964

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262290	DG3-qPCR	2.68	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2262190

Field Sample ID: G3SD0203

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-1.3	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	97.8	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	89.0	P	50 - 300

Lab Sample ID: 2262191

Field Sample ID: G3SD0196

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	104	P	50 - 300

Lab Sample ID: 2262192

Field Sample ID: G3SD0197

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	98.4	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	96.7	P	50 - 300

Lab Sample ID: 2262193

Field Sample ID: G3SD0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	94.9	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 2262193
Field Sample ID: G3SD0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	94.5	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	89.7	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	95.7	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	86.3	P	50 - 300

Lab Sample ID: 2262194
Field Sample ID: G3SD0199

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	99.7	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	111	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	157	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	83.3	P	50 - 300

Lab Sample ID: 2262195
Field Sample ID: G3SD0200

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	99.0	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	162	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	98.5	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision		
							LCS	SMP	MS
SOP-PCR-1.0	HF183-qPCR	282	79.3	87.1	83.4	83.7			7.35
				94.9					
	HF183-qPCR	82.6	99.8	81.6	84.3	69.4			13.9
				79.8					
SOP-PCR-1.2	GULL2-qPCR	162	101	59.0	70.9	58.1			
				61.0					
	GULL2-qPCR	109	105	68.6	75.0	102			19.9
				83.9					
SOP-PCR-1.3	GFD-qPCR	169	71.8	81.9	91.7	99.8			
				88.8					
	GFD-qPCR	112	97.6	98.4	98.1	100			5.34
				105					
SOP-PCR-1.4	BacR-qPCR	72.2	73.2	70.9	75.3	68.2			8.43
				65.8					
	BacR-qPCR	127	89.8	75.6	71.7	74.5			6.69
				79.6					
SOP-PCR-1.5	DG3-qPCR	84.5	105	79.5	92.2	89.2			4.47
				62.5					
	DG3-qPCR	100	58.5	77.3	75.5	75.5			2.68
				73.5					

Reference Method Descriptions

Method	Description	Associated Samples
Colilert-18	E. coli by Colilert-18/QT by Sanders in Fort Myers	2262196, 2262197, 2262198, 2262199, 2262200, 2262201
Enterolert/QT	Enterococci by Enterolert/QT by Sanders in Fort Myers	2262202, 2262203, 2262204, 2262205, 2262206, 2262207
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2262190, 2262191, 2262192, 2262193, 2262194, 2262195
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2262190, 2262191, 2262192, 2262193, 2262194, 2262195
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2262190, 2262191, 2262192, 2262193, 2262194, 2262195
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2262190, 2262191, 2262192, 2262193, 2262194, 2262195
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2262190, 2262191, 2262192, 2262193, 2262194, 2262195

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Colilert-18	07/13/2021	07/13/2021 17:33		07/14/2021 13:08	Sanders-Fort Myers	2262196, 2262197, 2262198, 2262199, 2262200, 2262201
Enterolert/QT	07/13/2021	07/13/2021 15:02		07/14/2021 15:10	Sanders-Fort Myers	2262202, 2262203, 2262204, 2262205, 2262206, 2262207
SOP-PCR-1.0	07/14/2021	07/14/2021 13:55	Amy M Gordon	07/19/2021 10:49	DeAsia Armster	2262190, 2262191, 2262192, 2262193
	07/14/2021	07/14/2021 15:11	Amy M Gordon	07/23/2021 11:16	DeAsia Armster	2262194, 2262195
SOP-PCR-1.2	07/14/2021	07/14/2021 13:55	Amy M Gordon	07/27/2021 08:36	Mailin Lopez	2262190, 2262191, 2262192, 2262193
	07/14/2021	07/14/2021 15:11	Amy M Gordon	07/28/2021 12:12	Mailin Lopez	2262194, 2262195
SOP-PCR-1.3	07/14/2021	07/14/2021 13:55	Amy M Gordon	07/27/2021 15:24	Mailin Lopez	2262190, 2262191, 2262192, 2262193
	07/14/2021	07/14/2021 15:11	Amy M Gordon	07/28/2021 14:38	Mailin Lopez	2262194, 2262195
SOP-PCR-1.4	07/14/2021	07/14/2021 13:55	Amy M Gordon	07/21/2021 13:09	DeAsia Armster	2262190, 2262191, 2262192, 2262193
	07/14/2021	07/14/2021 15:11	Amy M Gordon	07/26/2021 10:29	DeAsia Armster	2262194, 2262195
SOP-PCR-1.5	07/14/2021	07/14/2021 13:55	Amy M Gordon	07/21/2021 14:46	DeAsia Armster	2262190, 2262191, 2262192, 2262193
	07/14/2021	07/14/2021 15:11	Amy M Gordon	07/27/2021 11:54	DeAsia Armster	2262194, 2262195