

Biological Analysis Report

NE-DIST-2018-09-20-01

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

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
9143 Philips Highway, Suite 200
Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **GTM NERR-Pellicer Creek SMP - 5 + 5 Sites + 1 Field Blank**
Request ID: **RQ-2018-09-03-28**
Customer: **NE-DIST**
Project ID: **SMP**

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2600 Blair Stone Rd.
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Date Certified: 19-OCT-2018 16:24



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 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: Field Blank

Collection Date/Time: 09/19/2018 09:33

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026767	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P352765	RPD
		Phaeophytin-a	0.60	U	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P352765	RPD
2026794	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P352017	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P352017	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	UJ	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P352017	LCS
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P352017	LCS

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

Sample Location: Pellicer Creek 1

Collection Date/Time: 09/19/2018 10:33

Field ID: PC1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026762	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P352765	RPD
		Phaeophytin-a	0.60	U	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	0.71	I	ug/L	P352765	RPD
2026773	ASTM D650399	ENTEROCOCCI-ENTEROLERT	330		MPN/100 mL		
2026778	SM 9222 D	Fecal Coliforms-Membrane Filter	340		cfu/100 mL		
2026789	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	UJ	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P351391	LCS

Ref. Method and Comment:
SOP-PCR-1.2: Quality control failure(s) observed. See QA report for details.

Sample Location: Pellicer Creek 2

Collection Date/Time: 09/19/2018 09:37

Field ID: PC2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026763	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.69	U	ug/L	P352765	RPD
		Phaeophytin-a	0.75	U	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	0.74	I	ug/L	P352765	RPD
2026774	ASTM D650399	ENTEROCOCCI-ENTEROLERT	420		MPN/100 mL		
2026779	SM 9222 D	Fecal Coliforms-Membrane Filter	310		cfu/100 mL		
2026790	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P352017	
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	U	TSC/100 mL	P352017	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	2.2E+04		TSC/100 mL	P352017	LCS
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P352017	LCS

Sample Location: Pellicer Creek 3

Collection Date/Time: 09/19/2018 12:06

Field ID: PC3

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026757	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.0		ug/L	P352765	RPD
		Phaeophytin-a	0.65	I	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	3.5		ug/L	P352765	RPD
2026768	ASTM D650399	ENTEROCOCCI-ENTEROLERT	490		MPN/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	430		cfu/100 mL		
2026784	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P351391	LCS

Sample Location: Pellicer Creek 4

Collection Date/Time: 09/19/2018 11:13

Field ID: PC4

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026758	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P352765	RPD
		Phaeophytin-a	16		ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	10		ug/L	P352765	RPD
2026769	ASTM D650399	ENTEROCOCCI-ENTEROLERT	190		MPN/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	420		cfu/100 mL		
2026785	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P351391	LCS

Sample Location: Pellicer Creek 5

Collection Date/Time: 09/19/2018 10:43

Field ID: PC5

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026759	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P352765	RPD
		Phaeophytin-a	12		ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	7.5		ug/L	P352765	RPD
2026770	ASTM D650399	ENTEROCOCCI-ENTEROLERT	95		MPN/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	280		cfu/100 mL		
2026786	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P351391	LCS

Sample Location: Pellicer Creek 6

Collection Date/Time: 09/19/2018 10:10

Field ID: PC6

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026760	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.8		ug/L	P352765	RPD

Field ID: PC6

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026760	SM 10200 H (mod.)	Phaeophytin-a	1.7	I	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	7.0		ug/L	P352765	RPD
2026771	ASTM D650399	ENTEROCOCCI-ENTEROLERT	210		MPN/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	200		cfu/100 mL		
2026787	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P351391	LCS

Sample Location: Pellicer Creek 7

Collection Date/Time: 09/19/2018 09:31

Field ID: PC7

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026761	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.7		ug/L	P352765	RPD
		Phaeophytin-a	4.0		ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	10		ug/L	P352765	RPD
2026772	ASTM D650399	ENTEROCOCCI-ENTEROLERT	31		MPN/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	10	B	cfu/100 mL		
2026788	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P351391	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P351391	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P351391	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P351391	LCS

Sample Location: Dave Branch

Collection Date/Time: 09/19/2018 11:24

Field ID: DB

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026764	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	I	ug/L	P352765	RPD
		Phaeophytin-a	0.75	U	ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	1.2	I	ug/L	P352765	RPD
2026775	ASTM D650399	ENTEROCOCCI-ENTEROLERT	63		MPN/100 mL		
2026780	SM 9222 D	Fecal Coliforms-Membrane Filter	90	B	cfu/100 mL		
2026791	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P352017	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P352017	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P352017	LCS
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P352017	LCS

Sample Location: Stevens Branch

Collection Date/Time: 09/19/2018 09:40

Field ID: SB

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026765	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P352765	RPD
		Phaeophytin-a	0.60	U	ug/L	P352765	RPD

Field ID: SB

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026765	SM 10200 H (mod.)	Chlorophyll-a, Uncorrected	0.50	I	ug/L	P352765	RPD
2026776	ASTM D650399	ENTEROCOCCI-ENTEROLERT	280		MPN/100 mL		
2026781	SM 9222 D	Fecal Coliforms-Membrane Filter	440		cfu/100 mL		
2026792	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P352017	
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	U	TSC/100 mL	P352017	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	4.0E+03	I	TSC/100 mL	P352017	LCS
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P352017	LCS

Ref. Method and Comment:
SOP-PCR-1.4: Duplicate was analyzed and result is 3.0E+03 U.

Sample Location: Cracker Branch

Collection Date/Time: 09/19/2018 11:35

Field ID: CB

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026766	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.2		ug/L	P352765	RPD
		Phaeophytin-a	8.8		ug/L	P352765	RPD
		Chlorophyll-a, Uncorrected	9.7		ug/L	P352765	RPD
2026777	ASTM D650399	ENTEROCOCCI-ENTEROLERT	310		MPN/100 mL		
2026782	SM 9222 D	Fecal Coliforms-Membrane Filter	240		cfu/100 mL		
2026793	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P352017	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P352017	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P352017	LCS
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P352017	LCS

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P352765

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.60	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P351391

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

Reference Method: SOP-PCR-1.0
Batch ID: P352017

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: P351391

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

Reference Method: SOP-PCR-1.2
Batch ID: P352017

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

Reference Method: SOP-PCR-1.3
Batch ID: P351335

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

Reference Method: SOP-PCR-1.4
Batch ID: P351391

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

Reference Method: SOP-PCR-1.4
Batch ID: P352017

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

Reference Method: SOP-PCR-1.5
Batch ID: P351391

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

Reference Method: SOP-PCR-1.5
Batch ID: P352017

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: P352765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	106		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P351391

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: P351391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	100	110	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	99.4	142	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P351391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	107	168	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	98.7	123	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P351335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	131	41.0	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P351391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	83.3	164	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	102	183	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P351391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	96.5	254	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	96.5	205	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P351391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023677	HF183-qPCR	102	99.3	P/P	50 - 175
2023678	HF183-qPCR	83.0		P	50 - 175
2024325	HF183-qPCR	100		P	50 - 175
2024326	HF183-qPCR	99.4		P	50 - 175
2024434	HF183-qPCR	93.0		P	50 - 175
2025579	HF183-qPCR	91.2		P	50 - 175
2026784	HF183-qPCR	93.3		P	50 - 175
2026785	HF183-qPCR	76.1		P	50 - 175
2026786	HF183-qPCR	97.3		P	50 - 175
2026787	HF183-qPCR	95.2		P	50 - 175
2026788	HF183-qPCR	94.9		P	50 - 175
2026789	HF183-qPCR	85.3		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021158	HF183-qPCR	71.6		P	50 - 175
2022579	HF183-qPCR	91.2		P	50 - 175
2022581	HF183-qPCR	79.4		P	50 - 175
2022582	HF183-qPCR	78.8		P	50 - 175
2025922	HF183-qPCR	81.0		P	50 - 175
2025923	HF183-qPCR	84.3		P	50 - 175
2025924	HF183-qPCR	85.0		P	50 - 175
2026790	HF183-qPCR	81.1		P	50 - 175
2026791	HF183-qPCR	89.3		P	50 - 175
2026792	HF183-qPCR	82.8	88.6	P/P	50 - 175
2026793	HF183-qPCR	89.1		P	50 - 175
2026794	HF183-qPCR	92.8		P	50 - 175
2028632	HF183-qPCR	54.1		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P351391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024434	GULL2-qPCR	78.0		P	50 - 300
2025579	GULL2-qPCR	77.0		P	50 - 300
2026784	GULL2-qPCR	109		P	50 - 300
2026785	GULL2-qPCR	58.9		P	50 - 300
2026786	GULL2-qPCR	96.2		P	50 - 300
2026787	GULL2-qPCR	87.4		P	50 - 300
2026788	GULL2-qPCR	73.3		P	50 - 300
2026789	GULL2-qPCR	45.6		F	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022579	GULL2-qPCR	78.2		P	50 - 300
2022582	GULL2-qPCR	74.6		P	50 - 300
2025922	GULL2-qPCR	72.0		P	50 - 300
2025923	GULL2-qPCR	72.9		P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2

Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025924	GULL2-qPCR	70.4		P	50 - 300
2026790	GULL2-qPCR	88.4		P	50 - 300
2026791	GULL2-qPCR	85.8		P	50 - 300
2026792	GULL2-qPCR	71.0	62.3	P/P	50 - 300
2026793	GULL2-qPCR	81.0		P	50 - 300
2026794	GULL2-qPCR	95.1		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P351335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017120	GFD-purified-qPCR	97.2		P	50 - 175
2020083	GFD-purified-qPCR	142		P	50 - 175
2020084	GFD-purified-qPCR	148		P	50 - 175
2020738	GFD-purified-qPCR	158		P	50 - 175
2020739	GFD-purified-qPCR	142		P	50 - 175
2021267	GFD-purified-qPCR	120		P	50 - 175
2026784	GFD-purified-qPCR	144		P	50 - 175
2026785	GFD-purified-qPCR	107		P	50 - 175
2026786	GFD-purified-qPCR	116		P	50 - 175
2026787	GFD-purified-qPCR	115		P	50 - 175
2026788	GFD-purified-qPCR	75.3		P	50 - 175
2026789	GFD-purified-qPCR	83.9		P	50 - 175
2026790	GFD-purified-qPCR	131		P	50 - 175
2026791	GFD-purified-qPCR	168		P	50 - 175
2026792	GFD-purified-qPCR	140	159	P/P	50 - 175
2026793	GFD-purified-qPCR	139		P	50 - 175
2026794	GFD-purified-qPCR	193		F	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P351391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024434	BacR-qPCR	73.1		P	50 - 175
2025579	BacR-qPCR	77.2		P	50 - 175
2026784	BacR-qPCR	77.9		P	50 - 175
2026785	BacR-qPCR	74.8		P	50 - 175
2026786	BacR-qPCR	69.4		P	50 - 175
2026787	BacR-qPCR	67.5		P	50 - 175
2026788	BacR-qPCR	69.2		P	50 - 175
2026789	BacR-qPCR	65.7		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021158	BacR-qPCR	82.8		P	50 - 175
2022579	BacR-qPCR	88.3		P	50 - 175
2022582	BacR-qPCR	81.2		P	50 - 175
2025922	BacR-qPCR	96.1		P	50 - 175
2025923	BacR-qPCR	74.7		P	50 - 175
2025924	BacR-qPCR	64.7		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026790	BacR-qPCR	82.6		P	50 - 175
2026791	BacR-qPCR	88.9		P	50 - 175
2026792	BacR-qPCR	92.3	90.5	P/P	50 - 175
2026793	BacR-qPCR	96.4		P	50 - 175
2026794	BacR-qPCR	104		P	50 - 175
2028632	BacR-qPCR	67.3		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P351391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026784	DG3-qPCR	135		P	50 - 175
2026785	DG3-qPCR	130		P	50 - 175
2026786	DG3-qPCR	133		P	50 - 175
2026787	DG3-qPCR	120		P	50 - 175
2026788	DG3-qPCR	113		P	50 - 175
2026789	DG3-qPCR	105		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026790	DG3-qPCR	123		P	50 - 175
2026791	DG3-qPCR	104		P	50 - 175
2026792	DG3-qPCR	107	109	P/P	50 - 175
2026793	DG3-qPCR	111		P	50 - 175
2026794	DG3-qPCR	108		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P352765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026466	Chlorophyll-a, Corrected	61.8	Sample	F	0 - 25
2026466	Chlorophyll-a, Uncorrected	58.6	Sample	F	0 - 25
2026466	Phaeophytin-a	27.4	Sample	F	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P351391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023677	HF183-qPCR	3.16	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	HF183-qPCR	6.74	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P351391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023677	GULL2-qPCR	11.5	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	GULL2-qPCR	13.1	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P351335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	GFD-purified-qPCR	12.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P351391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023677	BacR-qPCR	11.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	BacR-qPCR	2.02	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P351391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	DG3-qPCR	1.16	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	DG3-qPCR	1.16	Spike	P	0 - 25

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2026784
Field Sample ID: PC3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	111	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	99.6	P	50 - 300

Lab Sample ID: 2026785
Field Sample ID: PC4

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	99.1	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	93.8	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	93.7	P	50 - 300

Lab Sample ID: 2026786
Field Sample ID: PC5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	98.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	106	P	50 - 300

Lab Sample ID: 2026787
Field Sample ID: PC6

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	118	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	114	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	99.6	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	99.8	P	50 - 300

Lab Sample ID: 2026788
Field Sample ID: PC7

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	109	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	101	P	50 - 300

Lab Sample ID: 2026789
Field Sample ID: PC1

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

Lab Sample ID: 2026789

Field Sample ID: PC1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	122	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	89.7	P	50 - 300

Lab Sample ID: 2026790

Field Sample ID: PC2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	120	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	105	P	50 - 300

Lab Sample ID: 2026791

Field Sample ID: DB

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	114	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	108	P	50 - 300

Lab Sample ID: 2026792

Field Sample ID: SB

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	120	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	101	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	102	P	50 - 300

Lab Sample ID: 2026793

Field Sample ID: CB

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	114	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	99.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	96.3	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	102	P	50 - 300

Lab Sample ID: 2026794

Field Sample ID: Field Blank

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	118	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	102	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	106						61.8	
	Chlorophyll-a, Uncorrected							58.6	
	Phaeophytin-a							27.4	
SOP-PCR-1.0	HF183-qPCR	110	100	102	99.3	83.0			3.16
	HF183-qPCR	142	99.4	81.1	89.3	82.8			6.74
SOP-PCR-1.2	GULL2-qPCR	168	107	78.0	77.0	109			11.5
	GULL2-qPCR	123	98.7	88.4	85.8	71.0			13.1
SOP-PCR-1.3	GFD-purified-qPCR	41.0	131	142	148	97.2			12.7
SOP-PCR-1.4	BacR-qPCR	164	83.3	73.1	77.2	77.9			11.7
	BacR-qPCR	183	102	82.6	88.9	92.3			2.02
SOP-PCR-1.5	DG3-qPCR	254	96.5	135	130	133			1.16
	DG3-qPCR	205	96.5	123	104	107			1.16

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D650399 / E82502	Enterococci by Enterolert Quanti-Tray Method by ALS Environmental Laboratory in Jacksonville	2026768, 2026769, 2026770, 2026771, 2026772, 2026773, 2026774, 2026775, 2026776, 2026777
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2026757, 2026758, 2026759, 2026760, 2026761, 2026762, 2026763, 2026764, 2026765, 2026766, 2026767
SM 9222 D / E82502	Fecal coliforms by membrane filter method by ALS Environmental Laboratories in Jacksonville	2026768, 2026769, 2026770, 2026771, 2026772, 2026778, 2026779, 2026780, 2026781, 2026782
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.5 / E31780	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	09/19/2018	09/19/2018 16:05		09/20/2018 17:16	ALS Environmental, Jax	2026768, 2026769, 2026770, 2026771, 2026772, 2026773, 2026774, 2026775, 2026776, 2026777
SM 10200 H (mod.)	09/20/2018	09/20/2018 14:10	Peterson Janvier	10/02/2018 15:05	Peterson Janvier	2026757, 2026758, 2026759, 2026760, 2026761, 2026762, 2026763, 2026764, 2026765, 2026766, 2026767
SM 9222 D	09/19/2018	09/19/2018 17:01		09/20/2018 15:12	ALS Environmental, Jax	2026771, 2026772, 2026778, 2026779, 2026781
	09/19/2018	09/19/2018 17:58		09/20/2018 17:04	ALS Environmental, Jax	2026768, 2026769, 2026770, 2026780, 2026782
SOP-PCR-1.0	09/20/2018	09/20/2018 15:30	Angela Smith	09/24/2018 09:05	Mailin Lopez	2026784, 2026785, 2026786, 2026787, 2026788, 2026789
	09/20/2018	09/20/2018 15:30	Angela Smith	09/27/2018 13:57	Mailin Lopez	2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.2	09/20/2018	09/20/2018 15:30	Angela Smith	09/28/2018 15:34	Mailin Lopez	2026790, 2026791, 2026792, 2026793, 2026794
	09/20/2018	09/20/2018 15:30	Angela Smith	10/18/2018 09:38	Mailin Lopez	2026784, 2026785, 2026786, 2026787, 2026788, 2026789
SOP-PCR-1.3	09/20/2018	09/20/2018 15:30	Sarah Menz	09/21/2018 12:01	Sarah Menz	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794
SOP-PCR-1.4	09/20/2018	09/20/2018 15:30	Angela Smith	09/28/2018 09:46	Mailin Lopez	2026790, 2026791, 2026792, 2026793, 2026794
	09/20/2018	09/20/2018 15:30	Angela Smith	10/17/2018 14:40	Mailin Lopez	2026784, 2026785, 2026786, 2026787, 2026788, 2026789
SOP-PCR-1.5	09/20/2018	09/20/2018 15:30	Angela Smith	09/28/2018 11:05	Sarah Menz	2026784, 2026785, 2026786, 2026787, 2026788, 2026789, 2026790, 2026791, 2026792, 2026793, 2026794