

Biological Analysis Report

NE-DIST-2018-10-19-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
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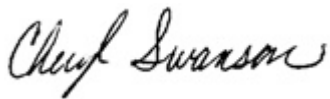
Event Description: **LSJR Marine**
Request ID: **RQ-2018-10-15-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 30-NOV-2018 09:59



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: BIG FISHWEIR CR END OF MERRIMAC AVE

Collection Date/Time: 10/18/2018 08:55

Field ID: G2NE1175

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034485	SM 10200 H (mod.)	Chlorophyll-a, Corrected	19		ug/L	P354067	
		Phaeophytin-a	4.7		ug/L	P354067	
		Chlorophyll-a, Uncorrected	22		ug/L	P354067	
2034489	ASTM D650399	ENTEROCOCCI-ENTEROLERT	62		MPN/100 mL		
2034495	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

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: DEER CR @ TALLEYRAND AVE

Collection Date/Time: 10/18/2018 09:35

Field ID: 20030792

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034486	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.0		ug/L	P354067	
		Phaeophytin-a	0.60	U	ug/L	P354067	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P354067	
2034490	ASTM D650399	ENTEROCOCCI-ENTEROLERT	570		MPN/100 mL		
2034496	SOP-PCR-1.0	HF183-qPCR**	260	I	GEU/100 mL	P354413	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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: Duplicate was analyzed and result is 140 U.

Sample Location: DUNN CREEK @ FAYE RD

Collection Date/Time: 10/18/2018 10:15

Field ID: 20030140

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034488	SM 10200 H (mod.)	Chlorophyll-a, Corrected	13		ug/L	P354067	
		Phaeophytin-a	2.7		ug/L	P354067	
		Chlorophyll-a, Uncorrected	15		ug/L	P354067	
2034492	ASTM D650399	ENTEROCOCCI-ENTEROLERT	31		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: HOPKINS CREEK @ FLORIDA BLVD

Collection Date/Time: 10/18/2018 10:55

Field ID: 20030698

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034493	ASTM D650399	ENTEROCOCCI-ENTEROLERT	580		MPN/100 mL		
2034498	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P354413	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	UJ	TSC/100 mL	P354413	MS
	SOP-PCR-1.3	GFD-purified-qPCR**	630	I	TSC/100 mL	P354991	LCS, MS, RPD
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P354413	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Field ID: 20030698

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A87894. Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A87868

Sample Location: HOPKINS CREEK @ FLORIDA
 BLVD.DUPLICATE

Collection Date/Time: 10/18/2018 11:00

Field ID: 20030698dup

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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2034494	ASTM D650399	ENTEROCOCCI-ENTEROLERT	320		MPN/100 mL		
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2034499	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P354413	
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	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P354413	MS
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	SOP-PCR-1.3	GFD-purified-qPCR**	730	I	TSC/100 mL	P354991	LCS, MS, RPD
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	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P354413	
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	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
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Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A87894

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A87868

Sample Location: HOPKINS CREEK @ KINGS RD

Collection Date/Time: 10/18/2018 11:20

Field ID: 20030758

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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2034487	SM 10200 H (mod.)	Chlorophyll-a, Corrected	16		ug/L	P354067	
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		Phaeophytin-a	1.7	I	ug/L	P354067	
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		Chlorophyll-a, Uncorrected	18		ug/L	P354067	
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2034491	ASTM D650399	ENTEROCOCCI-ENTEROLERT	97		MPN/100 mL		
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2034497	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
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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: P354067

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: P354413

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: P354413

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

Reference Method: SOP-PCR-1.3
Batch ID: P354991

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

Reference Method: SOP-PCR-1.4
Batch ID: P354413

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P354067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P354413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	95.6	154	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P354413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	103	232	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P354991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	101	34.0	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P354413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	117	141	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P354413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033479	HF183-qPCR	81.4	98.2	P	50 - 175
2034496	HF183-qPCR	113		P/P	50 - 175
2034498	HF183-qPCR	68.3		P	50 - 175
2034499	HF183-qPCR	69.4		P	50 - 175
2034929	HF183-qPCR	88.9	98.2	P	50 - 175
2035204	HF183-qPCR	111		P	50 - 175
2035205	HF183-qPCR	89.6		P	50 - 175
2035356	HF183-qPCR	91.7		P	50 - 175
2035358	HF183-qPCR	85.1	98.2	P	50 - 175
2036158	HF183-qPCR	65.3		P	50 - 175
2036159	HF183-qPCR	110		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P354413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2034498	GULL2-qPCR	29.1	98.2	F	50 - 300
2034499	GULL2-qPCR	61.2		P	50 - 300
2034929	GULL2-qPCR	92.9		P	50 - 300
2035204	GULL2-qPCR	81.4		P	50 - 300
2035205	GULL2-qPCR	84.7	98.2	P	50 - 300
2035356	GULL2-qPCR	195		P	50 - 300
2035358	GULL2-qPCR	81.3		P	50 - 300
2036158	GULL2-qPCR	71.0		P	50 - 300
2036159	GULL2-qPCR	118	98.2	P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P354991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2034498	GFD-purified-qPCR	95.5	98.2	P	50 - 175
2034499	GFD-purified-qPCR	91.2		P	50 - 175
2034929	GFD-purified-qPCR	148		P	50 - 175
2035204	GFD-purified-qPCR	146		P	50 - 175
2035205	GFD-purified-qPCR	111	98.2	P	50 - 175
2035356	GFD-purified-qPCR	120		P	50 - 175
2036158	GFD-purified-qPCR	94.7		P	50 - 175
2036159	GFD-purified-qPCR	105		P/F	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P354413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033479	BacR-qPCR	56.0	98.2	P	50 - 175
2034498	BacR-qPCR	59.3		P	50 - 175
2034499	BacR-qPCR	61.3		P	50 - 175
2034929	BacR-qPCR	86.1		P	50 - 175
2035204	BacR-qPCR	90.0	98.2	P	50 - 175
2035205	BacR-qPCR	95.5		P	50 - 175
2035356	BacR-qPCR	93.9		P	50 - 175
2035358	BacR-qPCR	88.6		P	50 - 175
2036158	BacR-qPCR	59.5	98.2	P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P354413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036159	BacR-qPCR	86.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P354067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034550	Chlorophyll-a, Corrected	9.88	Sample	P	0 - 25
2034550	Chlorophyll-a, Uncorrected	6.19	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P354413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034496	HF183-qPCR	14.1	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P354991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036159	GFD-purified-qPCR	56.5	Spike	F	0 - 25

* 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: 2034496
Field Sample ID: 20030792

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	110	P	50 - 300

Lab Sample ID: 2034498
Field Sample ID: 20030698

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	89.1	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	134	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	93.8	P	50 - 300

Lab Sample ID: 2034499
Field Sample ID: 20030698dup

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

Lab Sample ID: 2034499
Field Sample ID: 20030698dup

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	95.4	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	146	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	91.6	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	100						9.88	
	Chlorophyll-a, Uncorrected							6.19	
SOP-PCR-1.0	HF183-qPCR	154	95.6	89.6	91.7	85.1			14.1
				81.4					
SOP-PCR-1.2	GULL2-qPCR	232	103	81.4	84.7	195			
				81.3					
SOP-PCR-1.3	GFD-purified-qPCR	34.0	101	95.5	91.2	148			56.5
				146					
SOP-PCR-1.4	BacR-qPCR	141	117	90.0	95.5	93.9			
				88.6					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D650399 / E82502	Enterococci by Enterolert Quanti-Tray Method by ALS Environmental Laboratory in Jacksonville	2034489, 2034490, 2034491, 2034492, 2034493, 2034494
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2034485, 2034486, 2034487, 2034488
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2034496, 2034498, 2034499
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2034498, 2034499
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2034498, 2034499
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2034498, 2034499
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2034495, 2034496, 2034497, 2034498, 2034499

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	10/18/2018	10/18/2018 15:57		10/19/2018 16:33	ALS Environmental, Jax	2034489, 2034490, 2034491, 2034492, 2034493, 2034494
SM 10200 H (mod.)	10/19/2018	10/19/2018 14:36	Mariam Hanna	11/01/2018 08:45	Jennifer Mihalic	2034485, 2034486, 2034487, 2034488
SOP-PCR-1.0	10/19/2018	10/19/2018 12:20	Sarah Menz	11/19/2018 09:26	Mailin Lopez	2034496, 2034498, 2034499
SOP-PCR-1.2	10/19/2018	10/19/2018 12:20	Sarah Menz	11/20/2018 12:30	Mailin Lopez	2034498, 2034499
SOP-PCR-1.3	10/19/2018	10/19/2018 12:20	Sarah Menz	11/28/2018 11:22	Sarah Menz	2034498, 2034499
SOP-PCR-1.4	10/19/2018	10/19/2018 12:20	Sarah Menz	11/19/2018 13:20	Mailin Lopez	2034498, 2034499
SOP-PCR-4.0	10/19/2018	10/19/2018 12:20	Angela Smith	11/14/2018 10:21	Sarah Menz	2034495, 2034496, 2034497, 2034498, 2034499