Biological Analysis Report

SO-DIST-2020-09-17-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
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DOH Accreditation E85086

Event Description: **Charlotte Cricks +BOB**
Request ID: **RQ-2020-09-14-53**
Customer: **SO-DIST**
Project ID: **SMP**

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Date Certified: 15-OCT-2020 09:21

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 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: Cleveland Cemetary Ditch @ Riverside Rd. **Collection Date/Time: 09/16/2020 08:50**

Field ID: G3SD0076 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2196595	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	U	ug/L	P387721	
		Phaeophytin-a	1.8	U	ug/L	P387721	
		Chlorophyll-a, Uncorrected	1.3	I	ug/L	P387721	
2196599	SOP-PCR-1.0	HF183-purified-qPCR**	40	I J	GEU/100 mL	P387144	LCS, SUR
	SOP-PCR-1.4	BacR-qPCR**	2.0E+03	U	TSC/100 mL	P386924	
	SOP-PCR-1.5	DG3-qPCR**	1.7E+03	U	TSC/100 mL	P386924	
2196601	Enterolert/QT	Enterococci-Quanti-Tray	528		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.
SOP-PCR-1.0: Precision data unavailable for Analysis Batch A101301. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Bobcat Creek In Preserve East **Collection Date/Time: 09/16/2020 09:40**

Field ID: G3SD0131 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2196598	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.4	I	ug/L	P387721	
		Phaeophytin-a	1.8	U	ug/L	P387721	
		Chlorophyll-a, Uncorrected	4.2		ug/L	P387721	
2196600	SOP-PCR-1.0	HF183-purified-qPCR**	24	UJ	GEU/100 mL	P387144	LCS, SUR
	SOP-PCR-1.4	BacR-purified-qPCR**	1.1E+03	I J	TSC/100 mL	P387144	LCS, SUR
	SOP-PCR-1.5	DG3-purified-qPCR**	210	UJ	TSC/100 mL	P387144	LCS, SUR
2196604	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	73		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.
SOP-PCR-1.0: Precision data unavailable for Analysis Batch A101301. Refer to the Lab Analysis Report for an explanation of QC Codes.
SOP-PCR-1.4: Precision data unavailable for Analysis Batch A101302. Refer to the Lab Analysis Report for an explanation of QC Codes.
SOP-PCR-1.5: Precision data unavailable for Analysis Batch A101303. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Big Slough Canal **Collection Date/Time: 09/16/2020 10:40**

Field ID: G3SD0161 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2196597	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.8	I	ug/L	P387721	
		Phaeophytin-a	1.8	U	ug/L	P387721	
		Chlorophyll-a, Uncorrected	5.9		ug/L	P387721	
2196603	Enterolert/QT	Enterococci-Quanti-Tray	187		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: Big Slough @ Butler Park **Collection Date/Time: 09/16/2020 11:20**

Field ID: G3SD0168 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2196596	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.0	I	ug/L	P387721	
		Phaeophytin-a	1.8	U	ug/L	P387721	
		Chlorophyll-a, Uncorrected	2.1	I	ug/L	P387721	

Field ID: G3SD0168 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2196602	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	109		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.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P387721

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: SOP-PCR-1.0
Batch ID: P387144

Component	Result	Code	Units
HF183-purified-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P386924

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

Reference Method: SOP-PCR-1.4
Batch ID: P387144

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

Reference Method: SOP-PCR-1.5
Batch ID: P386924

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

Reference Method: SOP-PCR-1.5
Batch ID: P387144

Component	Result	Code	Units
DG3-purified-qPCR	430	U	TSC/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P387721

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	99.6		P	84 - 116

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P387144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	107	16.3	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P386924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	95.6	71.4	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P387144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-purified-qPCR	77.8	9.78	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P386924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	82.9	80.7	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P387144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-purified-qPCR	61.4	15.8	P/F	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P387144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194514	HF183-purified-qPCR	128		P	50 - 175
2196599	HF183-purified-qPCR	98.9		P	50 - 175
2196600	HF183-purified-qPCR	107		P	50 - 175
2197431	HF183-purified-qPCR	104		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P386924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194195	BacR-qPCR	77.8	73.1	P/P	50 - 175
2194437	BacR-qPCR	66.1		P	50 - 175
2195672	BacR-qPCR	85.0		P	50 - 175
2195945	BacR-qPCR	80.0		P	50 - 175
2195946	BacR-qPCR	68.1		P	50 - 175
2196599	BacR-qPCR	67.8		P	50 - 175
2197429	BacR-qPCR	74.6		P	50 - 175
2197430	BacR-qPCR	77.0		P	50 - 175
2197431	BacR-qPCR	76.1		P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P386924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197581	BacR-qPCR	77.8		P	50 - 175
2197653	BacR-qPCR	77.6		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P387144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194514	BacR-purified-qPCR	63.9		P	50 - 175
2196600	BacR-purified-qPCR	58.9		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P386924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194195	DG3-qPCR	93.7	94.6	P/P	50 - 175
2194437	DG3-qPCR	88.4		P	50 - 175
2195672	DG3-qPCR	101		P	50 - 175
2195945	DG3-qPCR	89.8		P	50 - 175
2195946	DG3-qPCR	94.3		P	50 - 175
2196599	DG3-qPCR	90.8		P	50 - 175
2197429	DG3-qPCR	81.4		P	50 - 175
2197430	DG3-qPCR	87.9		P	50 - 175
2197431	DG3-qPCR	89.1		P	50 - 175
2197581	DG3-qPCR	107		P	50 - 175
2197653	DG3-qPCR	89.7		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P387144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194514	DG3-purified-qPCR	80.4		P	50 - 175
2196600	DG3-purified-qPCR	69.1		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P387721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2196932	Chlorophyll-a, Corrected	0.351	Sample	P	0 - 25
2196932	Chlorophyll-a, Uncorrected	0.574	Sample	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P386924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194195	BacR-qPCR	6.20	Spike	P	0 - 25

Quality Assurance Report
Precision

Reference Method: SOP-PCR-1.5
Batch ID: P386924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194195	DG3-qPCR	0.962	Spike	P	0 - 25

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2196599
Field Sample ID: G3SD0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	12.0	F	50 - 300
SOP-PCR-1.4	SKETA-qPCR	86.6	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	134	P	50 - 300

Lab Sample ID: 2196600
Field Sample ID: G3SD0131

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	11.2	F	50 - 300
SOP-PCR-1.4	SKETA-qPCR	12.2	F	30 - 300
SOP-PCR-1.5	SKETA-qPCR	10.6	F	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	99.6			0.351	
	Chlorophyll-a, Uncorrected				0.574	
SOP-PCR-1.0	HF183-purified-qPCR	16.3 107	98.9 107 104 128			
SOP-PCR-1.4	BacR-purified-qPCR	9.78 77.8	63.9 58.9			
	BacR-qPCR	71.4 95.6	77.8 73.1 66.1 85.0			6.20
SOP-PCR-1.5	DG3-purified-qPCR	15.8 61.4	80.4 69.1			
	DG3-qPCR	80.7 82.9	93.7 94.6 88.4 101			0.962

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert/QT by BEA South in North Port	2196601, 2196603
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2196595, 2196596, 2196597, 2196598
SM 9223 Quanti-Tray	E. coli by Colilert/QT by BEA South in North Port	2196602, 2196604
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2196599, 2196600

Reference Method Descriptions

Method	Description	Associated Samples
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2196599
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2196600
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2196599
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2196600

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	09/16/2020	09/16/2020 13:47		09/17/2020 15:02	Benchmark EnviroAnalytical in North Port	2196601, 2196603
SM 10200 H (mod.)	09/17/2020	09/17/2020 13:13	Jessica Sherman	09/22/2020 13:48	Yuliya Danyuk	2196595, 2196596, 2196597, 2196598
SM 9223 Quanti-Tray	09/16/2020	09/16/2020 13:40		09/17/2020 14:55	Benchmark EnviroAnalytical in North Port	2196602, 2196604
SOP-PCR-1.0	09/17/2020	09/17/2020 13:00	Lauren Campbell	09/30/2020 13:36	Lauren Campbell	2196599, 2196600
SOP-PCR-1.4	09/17/2020	09/17/2020 13:00	Lauren Campbell	09/30/2020 14:31	Lauren Campbell	2196600
	09/17/2020	09/17/2020 13:00	Mailin Lopez	09/29/2020 12:34	Lauren Campbell	2196599
SOP-PCR-1.5	09/17/2020	09/17/2020 13:00	Lauren Campbell	09/30/2020 15:34	Lauren Campbell	2196600
	09/17/2020	09/17/2020 13:00	Mailin Lopez	09/29/2020 14:58	Lauren Campbell	2196599