

Biological Analysis Report

NE-DIST-2019-05-14-01

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

Event Description: **Bmap 1**
Request ID: **RQ-2019-05-13-16**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 13-JUN-2019 11:43



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Chlorophyll/Grain Size/BOD, Microbiology and Molecular.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: GOODBYS CR ABOVE WEST BRANCH AT SAN CLERC **Collection Date/Time: 05/13/2019 12:10**

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085944	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	U	ug/L	P364760	
		Phaeophytin-a	1.8	U	ug/L	P364760	
		Chlorophyll-a, Uncorrected	1.2	U	ug/L	P364760	
2085947	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	365.4	Q	MPN/100 mL	P364023	
2085952	SOP-PCR-1.0	HF183-qPCR**	260	I	GEU/100 mL	P363934	LCS

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: CRAIG CR. 100m DOWN FROM FOOTBRIDGE IN PARK **Collection Date/Time: 05/13/2019 12:35**

Field ID: 20030958

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085943	SM 10200 H (mod.)	Chlorophyll-a, Corrected	21		ug/L	P364760	
		Phaeophytin-a	1.8	U	ug/L	P364760	
		Chlorophyll-a, Uncorrected	23		ug/L	P364760	
2085946	Enterolert/QT	Enterococci-Quanti-Tray	1119.0	Q	MPN/100 mL	P364023	
2085951	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

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: CRAIG CR @ HENDRICKS AVE

Collection Date/Time: 05/13/2019 12:50

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085949	Enterolert/QT	Enterococci-Quanti-Tray	1006	AQ	MPN/100 mL	P364023	
2085954	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

Sample Location: BUTCHER PEN CR AT WESCONNETH

Collection Date/Time: 05/13/2019 13:25

Field ID: 20030760

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085950	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	191.8	Q	MPN/100 mL	P364023	

Sample Location: NW TRIBUTARY TO OPEN CR AT HODGES

Collection Date/Time: 05/13/2019 14:45

Field ID: 20030848

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085945	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8	I	ug/L	P364760	
		Phaeophytin-a	1.8	U	ug/L	P364760	
		Chlorophyll-a, Uncorrected	2.9	I	ug/L	P364760	
2085948	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	980.4	Q	MPN/100 mL	P364023	
2085953	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

Field ID: 20030848

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: Enterolert/QT
 Batch ID: P364023

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

Reference Method: SM 10200 H (mod.)
 Batch ID: P364760

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P364023

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

Reference Method: SOP-PCR-1.0
 Batch ID: P363934

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P364760

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	99.7		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P363934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	153	186	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P363934

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

Reference Method: SOP-PCR-1.0
Batch ID: P363934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083344	HF183-qPCR	128		P	50 - 175
2083597	HF183-qPCR	105		P	50 - 175
2085191	HF183-qPCR	106		P	50 - 175
2085852	HF183-qPCR	129		P	50 - 175
2085853	HF183-qPCR	111		P	50 - 175
2085951	HF183-qPCR	106		P	50 - 175
2085952	HF183-qPCR	155		P	50 - 175
2085953	HF183-qPCR	106		P	50 - 175
2085954	HF183-qPCR	133	119	P/P	50 - 175
2086433	HF183-qPCR	122		P	50 - 175
2086434	HF183-qPCR	120		P	50 - 175
2086435	HF183-qPCR	110		P	50 - 175

Quality Assurance Report Precision

Reference Method: Enterolert/QT
Batch ID: P364023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085949	Enterococci-Quanti-Tray	5.73	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
Batch ID: P364760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086115	Chlorophyll-a, Corrected	5.02	Sample	P	0 - 25
2086115	Chlorophyll-a, Uncorrected	7.50	Sample	P	0 - 25

Reference Method: SM 9223 Quanti-Tray
Batch ID: P364023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085888	Escherichia Coli-Quanti-Tray	43.6	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P363934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085954	HF183-qPCR	11.2	Spike	P	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

Quality Assurance Report Surrogates

Lab Sample ID: 2085951
Field Sample ID: 20030958

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.7	P	50 - 300

Lab Sample ID: 2085952
Field Sample ID: 20030891

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300

Lab Sample ID: 2085953
Field Sample ID: 20030848

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	83.6	P	50 - 300

Lab Sample ID: 2085954
Field Sample ID: 20030793

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
Enterolert/QT	Enterococci-Quanti-Tray				5.73	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	99.7			5.02	
	Chlorophyll-a, Uncorrected				7.50	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				43.6	
SOP-PCR-1.0	HF183-qPCR	186 153	106 155 106 133			11.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2085946, 2085949
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2085943, 2085944, 2085945
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2085947, 2085948, 2085950
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2085951, 2085952, 2085953, 2085954

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	05/14/2019	05/14/2019 14:13	Edwin Gonzalez-Soto	05/15/2019 15:20	Edwin Gonzalez-Soto	2085946, 2085949
SM 10200 H (mod.)	05/14/2019	05/14/2019 13:30	Kara Sprague	05/29/2019 16:32	Carina A. Tull	2085943, 2085944, 2085945
SM 9223 Quanti-Tray	05/14/2019	05/14/2019 14:45	Edwin Gonzalez-Soto	05/15/2019 10:16	Edwin Gonzalez-Soto	2085947, 2085948, 2085950
SOP-PCR-1.0	05/14/2019	05/15/2019 09:30	Angela Smith	06/06/2019 12:17	Mailin Lopez	2085951, 2085952, 2085953, 2085954