

Biological Analysis Report

NE-DIST-2019-04-24-01

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

Event Description: **Bmap 2**
Request ID: **RQ-2019-04-22-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 22-MAY-2019 14:37



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: TROUT R @ DINSMORE BOAT RAMP DOCK
 NR US 1**

Collection Date/Time: 04/23/2019 11:15

Field ID: 20030123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080378	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.3		ug/L	P363330	
		Phaeophytin-a	2.0	I	ug/L	P363330	
		Chlorophyll-a, Uncorrected	7.8		ug/L	P363330	
2080382	Enterolert/QT	Enterococci-Quanti-Tray	173.0	AQ	MPN/100 mL	P363013	
2080387	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P362662	

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: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 04/23/2019 11:40

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080379	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P363330	
		Phaeophytin-a	0.90	U	ug/L	P363330	
		Chlorophyll-a, Uncorrected	0.62	I	ug/L	P363330	
2080383	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	228.2	Q	MPN/100 mL	P363013	

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: MONCRIEF CR @ 21ST ST

Collection Date/Time: 04/23/2019 12:20

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080385	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	286.8	AQ	MPN/100 mL	P363013	

Sample Location: MONCRIEF CR AT MONCRIEF ROAD

Collection Date/Time: 04/23/2019 12:40

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080377	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.2		ug/L	P363330	
		Phaeophytin-a	0.90	U	ug/L	P363330	
		Chlorophyll-a, Uncorrected	3.7		ug/L	P363330	
2080381	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	488.4	Q	MPN/100 mL	P363013	

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 FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 04/23/2019 13:30

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080384	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	148.3	Q	MPN/100 mL	P363013	
2080388	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P362662	

Sample Location: LITTLE FISHWEIR AT OAK ST

Collection Date/Time: 04/23/2019 14:00

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080376	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.0		ug/L	P363330	
		Phaeophytin-a	0.90	U	ug/L	P363330	
		Chlorophyll-a, Uncorrected	6.3		ug/L	P363330	
2080380	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	JQ	MPN/100 mL	P363013	
2080386	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P362662	

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.
 SM 9223 Quanti-Tray: All Quanti-Tray wells were positive. Result may be higher than reported. Laboratory duplicate result is 2419.6. Precision data is unavailable due to the high amount of analyte in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: Enterolert/QT
 Batch ID: P363013

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

Reference Method: SM 10200 H (mod.)
 Batch ID: P363330

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: P363013

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

Reference Method: SOP-PCR-1.0
 Batch ID: P362662

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: P363330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	104		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P362662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	105	128	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P362662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079961	HF183-qPCR	97.7		P	50 - 175
2080144	HF183-qPCR	109	106	P/P	50 - 175
2080145	HF183-qPCR	113		P	50 - 175
2080146	HF183-qPCR	107		P	50 - 175
2080147	HF183-qPCR	86.0		P	50 - 175
2080247	HF183-qPCR	88.3		P	50 - 175
2080248	HF183-qPCR	75.2		P	50 - 175
2080386	HF183-qPCR	104		P	50 - 175
2080387	HF183-qPCR	97.1		P	50 - 175
2080388	HF183-qPCR	96.8		P	50 - 175
2081275	HF183-qPCR	102		P	50 - 175
2081276	HF183-qPCR	106		P	50 - 175
2081376	HF183-qPCR	113		P	50 - 175

Quality Assurance Report Precision

Reference Method: Enterolert/QT
Batch ID: P363013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080382	Enterococci-Quanti-Tray	13.9	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
Batch ID: P363330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080353	Chlorophyll-a, Corrected	5.44	Sample	P	0 - 25
2080353	Chlorophyll-a, Uncorrected	5.60	Sample	P	0 - 25

Reference Method: SM 9223 Quanti-Tray
Batch ID: P363013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080385	Escherichia Coli-Quanti-Tray	27.0	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P362662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080144	HF183-qPCR	2.75	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: 2080386
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	97.4	P	50 - 300

Lab Sample ID: 2080387
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	97.4	P	50 - 300

Lab Sample ID: 2080388
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.8	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
Enterolert/QT	Enterococci-Quanti-Tray				13.9	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	104			5.44	
	Chlorophyll-a, Uncorrected				5.60	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				27.0	
SOP-PCR-1.0	HF183-qPCR	128 105	97.7 109 106 113			2.75

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2080382
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2080376, 2080377, 2080378, 2080379
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2080380, 2080381, 2080383, 2080384, 2080385
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2080386, 2080387, 2080388

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	04/24/2019	04/24/2019 14:24	Edwin Gonzalez-Soto	04/25/2019 16:37	Edwin Gonzalez-Soto	2080382
SM 10200 H (mod.)	04/24/2019	04/24/2019 13:34	Jennifer Mihalic	05/02/2019 11:43	Carina A. Tull	2080376, 2080377, 2080378, 2080379
SM 9223 Quanti-Tray	04/24/2019	04/24/2019 14:24	Edwin Gonzalez-Soto	04/25/2019 10:59	Edwin Gonzalez-Soto	2080380, 2080381, 2080383, 2080384, 2080385
SOP-PCR-1.0	04/24/2019	04/24/2019 15:05	Angela Smith	05/03/2019 08:10	Sarah Menz	2080386, 2080387, 2080388