

Biological Analysis Report

WQ-ASSESS-2017-03-21-01

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

Event Description: **St. Marks, Gulf Of Mexico**
Request ID: **RQ-2017-03-20-22**
Customer: **WQ-ASSESS**
Project ID: **SMP**

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Certified by: Jacqueline Savage, Environmental Specialist III

Date Certified: 18-APR-2017 16:38

A handwritten signature in black ink that reads "Jackie Savage". The signature is written in a cursive, flowing style.

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 and Microbiology.

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: Dickson Bay North

Collection Date/Time: 03/21/2017 09:30

Field ID: G1WA0062-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881851	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P322284	
		Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.6			P322284	
		Chlorophyll-a, Uncorrected	1.5		ug/L	P322284	

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: Dickson Bay South

Collection Date/Time: 03/21/2017 09:49

Field ID: G1WA0063-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881852	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.5		ug/L	P322284	
		Phaeophytin-a	1.2		ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.5			P322284	
		Chlorophyll-a, Uncorrected	4.4		ug/L	P322284	

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: Mouth of East River

Collection Date/Time: 03/21/2017 11:44

Field ID: G1WA0011-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881853	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1		ug/L	P322284	
		Phaeophytin-a	0.64	I	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.5			P322284	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P322284	

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: East River Downstream of Boggy Bayou

Collection Date/Time: 03/21/2017 12:01

Field ID: G1WA0056-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881854	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4		ug/L	P322284	
		Phaeophytin-a	0.78	I	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.5			P322284	
		Chlorophyll-a, Uncorrected	2.9		ug/L	P322284	

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: Apalachee Bay South of St. Marks River

Collection Date/Time: 03/21/2017 12:31

Field ID: G1WA0048-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881855	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.65	I	ug/L	P322284	

Field ID: G1WA0048-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881855	SM 10200 H (mod.)	Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.9			P322284	
		Chlorophyll-a, Uncorrected	0.58	I	ug/L	P322284	

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: St. Marks River at Channel Marker 22

Collection Date/Time: 03/21/2017 12:55

Field ID: G1WA0008-03212017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881856	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.97	I	ug/L	P322284	
		Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.7			P322284	
		Chlorophyll-a, Uncorrected	1.0	I	ug/L	P322284	

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: St. Marks River at Channel Marker 60

Collection Date/Time: 03/21/2017 13:29

Field ID: G1WA0055-03212017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881857	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P322284	
		Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.5			P322284	
		Chlorophyll-a, Uncorrected	0.53	I	ug/L	P322284	

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: St. Marks River at Channel Marker 60

Collection Date/Time: 03/21/2017 13:29

Field ID: G1WA0055-03212017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881860	Enterolert/QT	Enterococci-Quant- Tray	1.0		MPN/100 mL	P322206	
1881861	SM 9222 D	Fecal Coliforms-Membrane Filter	18	B	cfu/100 mL	P321980	

Ref. Method and Comment:

SM 9222 D: Laboratory duplicate result is 14 B. Precision data for this duplicate is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: St. Marks River at Channel Marker 60
DUPLICATE

Collection Date/Time: 03/21/2017 13:29

Field ID: G1WA0055-03212017D DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881859	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P322284	
		Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	1.5			P322284	
		Chlorophyll-a, Uncorrected	0.64	I	ug/L	P322284	

Field ID: G1WA0055-03212017D DUPLICATE

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.							

Sample Location: QC BLANK

Collection Date/Time: 03/21/2017 13:15

Field ID: G1WA0055-03212017B

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881858	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P322284	
		Phaeophytin-a	0.40	U	ug/L	P322284	
		Chlorophyll/Phaeophytin Ratio	0.92			P322284	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P322284	

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: P322206

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

Reference Method: SM 10200 H (mod.)
Batch ID: P322284

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

Reference Method: SM 9222 D
Batch ID: P321980

Component	Result	Code	Units
Fecal Coliforms-Membrane Filter	2	U	cfu/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P322284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	89.6		P	84 - 116

Quality Assurance Report
Precision

Quality Assurance Report Precision

Reference Method: Enterolert/QT
 Batch ID: P322206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881710	Enterococci-Quanti-Tray	22.8	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
 Batch ID: P322284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881963	Chlorophyll-a, Uncorrected	0.673	Sample	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 Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
Enterolert/QT	Enterococci-Quanti-Tray				22.8	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	89.6				
	Chlorophyll-a, Uncorrected				0.673	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	1881860
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1881851, 1881852, 1881853, 1881854, 1881855, 1881856, 1881857, 1881858, 1881859
SM 9222 D / E31780	Fecal coliforms by membrane filter method - non-chlorinated water systems	1881861

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	03/21/2017	03/21/2017 16:00	Morgan Lane	03/22/2017 16:05	Brian Cumbie	1881860
SM 10200 H (mod.)	03/21/2017	03/22/2017 08:40	Morgan Lane	03/27/2017	Kim M. Spencer	1881851, 1881852, 1881853, 1881854, 1881855, 1881856, 1881857, 1881858, 1881859
SM 9222 D	03/21/2017	03/21/2017 16:05	Brian Cumbie	03/22/2017 14:10	Brian Cumbie	1881861