

Biological Analysis Report

NW-DIST-2017-09-06-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
University of West Florida
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DOH Accreditation E71969

Event Description: **Project Greenshores**
Request ID: **RQ-2017-08-28-15**
Customer: **NW-DIST**
Project ID: **DISTRICT**

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Date Certified: 12-DEC-2017 13:37



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 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: Range Marker E of Texar

Collection Date/Time: 09/05/2017 11:07

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927622	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.6		ug/L	P331833	
		Phaeophytin-a	1.3		ug/L	P331833	
		Chlorophyll-a, Uncorrected	7.7		ug/L	P331833	
1927634	Enterolert/QT	Enterococci-Quanti-Tray	20		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: 1/2 Bridge and Muscogee

Collection Date/Time: 09/05/2017 11:16

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927623	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.1		ug/L	P331833	
		Phaeophytin-a	1.1	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	7.1		ug/L	P331833	
1927635	Enterolert/QT	Enterococci-Quanti-Tray	10		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: East of Primary Stormdrain

Collection Date/Time: 09/05/2017 11:25

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927624	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.9		ug/L	P331833	
		Phaeophytin-a	0.80	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	7.6		ug/L	P331833	
1927636	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: 100 Ft. South of Stormdrain

Collection Date/Time: 09/05/2017 11:32

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927625	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.3		ug/L	P331833	
		Phaeophytin-a	1.1	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	7.2		ug/L	P331833	
1927637	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: End of Chase St.

Collection Date/Time: 09/05/2017 11:47

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927626	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.8		ug/L	P331833	

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927626	SM 10200 H (mod.)	Phaeophytin-a	0.79	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	5.4		ug/L	P331833	
1927638	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: 1/2 Muscogee and Hawkshaw

Collection Date/Time: 09/05/2017 11:56

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927627	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.1		ug/L	P331833	
		Phaeophytin-a	1.0	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	6.9		ug/L	P331833	
1927639	Enterolert/QT	Enterococci-Quanti-Tray	20		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: 1/2 Bridge and Port

Collection Date/Time: 09/05/2017 12:03

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927628	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.4		ug/L	P331833	
		Phaeophytin-a	0.58	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	6.0		ug/L	P331833	
1927640	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: West of Stormdrain Inside Rocks

Collection Date/Time: 09/05/2017 11:40

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927629	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.1		ug/L	P331833	
		Phaeophytin-a	0.83	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	5.8		ug/L	P331833	
1927641	Enterolert/QT	Enterococci-Quanti-Tray	20		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: West End of Hawkshaw 100 ft S of Outfall

Collection Date/Time: 09/05/2017 12:31

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927630	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.8		ug/L	P331833	
		Phaeophytin-a	0.70	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	6.4		ug/L	P331833	

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927642	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Between Marina and Outfall

Collection Date/Time: 09/05/2017 12:26

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927631	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.7		ug/L	P331833	
		Phaeophytin-a	0.74	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	6.4		ug/L	P331833	
1927643	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Entrance of Marina

Collection Date/Time: 09/05/2017 12:19

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927632	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.0	A	ug/L	P331833	
		Phaeophytin-a	0.93	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	6.7	A	ug/L	P331833	
1927644	Enterolert/QT	Enterococci-Quanti-Tray	10	U	MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 0.72 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 1/4 between bridge and port 400 ft from shore

Collection Date/Time: 09/05/2017 12:11

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927633	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.1		ug/L	P331833	
		Phaeophytin-a	0.66	I	ug/L	P331833	
		Chlorophyll-a, Uncorrected	5.8		ug/L	P331833	
1927645	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Inside Hawkshaw Lagoon

Collection Date/Time: 09/05/2017 12:47

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927861	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.6		ug/L	P331907	
		Phaeophytin-a	1.8		ug/L	P331907	
		Chlorophyll-a, Uncorrected	8.9		ug/L	P331907	
1927863	Enterolert/QT	Enterococci-Quanti-Tray	31		MPN/100 mL		

Field ID: 13

Matrix: W-SURF-SLT

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

Sample Location: East of Stormdrain Inside PGSII

Collection Date/Time: 09/05/2017 13:01

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1927862	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.2		ug/L	P331907	
		Phaeophytin-a	1.0	I	ug/L	P331907	
		Chlorophyll-a, Uncorrected	7.1		ug/L	P331907	
1927864	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: P331833

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 10200 H (mod.)

Batch ID: P331907

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P331833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	99.9		P	84 - 116

Reference Method: SM 10200 H (mod.)

Batch ID: P331907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P331833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927632	Chlorophyll-a, Corrected	3.20	Sample	P	0 - 25
1927632	Chlorophyll-a, Uncorrected	1.20	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P331907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927879	Chlorophyll-a, Uncorrected	9.03	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	Precision
				LCS SMP MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	99.9		3.20
	Chlorophyll-a, Corrected	107		
	Chlorophyll-a, Uncorrected			1.20
	Chlorophyll-a, Uncorrected			9.03

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E71969	Enterococci by Enterolert Quanti-Tray method by UWF Overflow Laboratory for NWD	1927634, 1927635, 1927636, 1927637, 1927638, 1927639, 1927640, 1927641, 1927642, 1927643, 1927644, 1927645, 1927863, 1927864
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1927622, 1927623, 1927624, 1927625, 1927626, 1927627, 1927628, 1927629, 1927630, 1927631, 1927632, 1927633, 1927861, 1927862

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	09/05/2017	09/05/2017 16:25		09/06/2017 16:53	UWF Lab	1927634, 1927635, 1927636, 1927637, 1927638, 1927639, 1927640, 1927641, 1927642, 1927643, 1927644, 1927645, 1927863, 1927864
SM 10200 H (mod.)	09/06/2017	09/06/2017 14:19	Morgan Lane	09/19/2017	Kim M. Spencer	1927622, 1927623, 1927624, 1927625, 1927626, 1927627, 1927628, 1927629, 1927630, 1927631, 1927632, 1927633
	09/06/2017	09/06/2017 14:19	Morgan Lane	09/20/2017	Kim M. Spencer	1927861, 1927862