

Biological Analysis Report

NW-DIST-2017-06-06-03

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: **WBID 291 489A 542 676 639 586 531**
Request ID: **RQ-2017-06-05-63**
Customer: **NW-DIST**
Project ID: **SMP**

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Certified by: Jennifer Walters, Environmental Manager

Date Certified: 14-JUL-2017 13:34



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 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: Carpenters Creek above 9th Ave

Collection Date/Time: 06/05/2017 12:00

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903769	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.7		ug/L	P326462	
		Phaeophytin-a	1.3		ug/L	P326462	
		Chlorophyll/Phaeophytin Ratio	1.5			P326462	
		Chlorophyll-a, Uncorrected	3.6		ug/L	P326462	

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: Carpenters Creek above 9th Ave

Collection Date/Time: 06/05/2017 12:00

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903774	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1935		MPN/100 mL		
1903778	SOP-PCR-1.0	HF183-qPCR**	310	I	GEU/100 mL	P328003	
	SOP-PCR-1.2	GULL2-qPCR**	1.1E+04	U	TSC/100 mL	P326292	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: No amplification of GULL2 marker.

Sample Location: Carpenters Creek

Collection Date/Time: 06/05/2017 12:05

Field ID: G4NW0415DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903770	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8		ug/L	P326462	
		Phaeophytin-a	1.5		ug/L	P326462	
		Chlorophyll/Phaeophytin Ratio	1.5			P326462	
		Chlorophyll-a, Uncorrected	3.7		ug/L	P326462	

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: Carpenters Creek

Collection Date/Time: 06/05/2017 12:05

Field ID: G4NW0415DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903775	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	3654		MPN/100 mL		
1903779	SOP-PCR-1.0	HF183-qPCR**	270	I	GEU/100 mL	P328003	
	SOP-PCR-1.2	GULL2-qPCR**	1.1E+04	U	TSC/100 mL	P326292	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: No amplification of GULL2 marker.

Sample Location: Carpenters Creek above 9th Ave

Collection Date/Time: 06/05/2017 12:10

Field ID: FIELDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903771	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P326462	
		Phaeophytin-a	0.40	U	ug/L	P326462	

Field ID: FIELDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903771	SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio	1.1			P326462	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P326462	

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: Carpenters Creek above 9th Ave

Collection Date/Time: 06/05/2017 12:10

Field ID: FIELDBLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903776	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1	U	MPN/100 mL		

Sample Location: Ten Mile Creek above Power Lines

Collection Date/Time: 06/05/2017 12:50

Field ID: G5NW0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903772	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.0	I	ug/L	P326462	
		Phaeophytin-a	0.62	U	ug/L	P326462	
		Chlorophyll/Phaeophytin Ratio	1.7			P326462	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P326462	

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: Ten Mile Creek above Power Lines

Collection Date/Time: 06/05/2017 12:50

Field ID: G5NW0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903777	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	288		MPN/100 mL		
1903781	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	UA	TSC/100 mL	P326292	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: No amplification of GULL2 marker.

Sample Location: Clear Creek @ Tecumesh Trail

Collection Date/Time: 06/05/2017 13:30

Field ID: G4NW0358

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903773	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6		ug/L	P326462	
		Phaeophytin-a	0.57	U	ug/L	P326462	
		Chlorophyll/Phaeophytin Ratio	1.6			P326462	
		Chlorophyll-a, Uncorrected	3.0		ug/L	P326462	

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P326462

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: SOP-PCR-1.0
Batch ID: P328003

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

Reference Method: SOP-PCR-1.2
Batch ID: P326292

Component	Result	Code	Units
GULL2-qPCR	1.7E+04	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P326462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.8		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P328003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	108	113	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P326292

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	84.7	86.2	P/P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P328003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903778	HF183-qPCR	114		P	50 - 175
1903779	HF183-qPCR	117		P	50 - 175
1903824	HF183-qPCR	84.8		P	50 - 175
1903826	HF183-qPCR	83.5		P	50 - 175
1904117	HF183-qPCR	101	118	P/P	50 - 175
1904193	HF183-qPCR	91.8		P	50 - 175
1904194	HF183-qPCR	120		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P328003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904195	HF183-qPCR	146		P	50 - 175
1905561	HF183-qPCR	125		P	50 - 175
1908822	HF183-qPCR	143		P	50 - 175
1909880	HF183-qPCR	113		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P326292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903778	GULL2-qPCR	80.6		P	50 - 300
1903779	GULL2-qPCR	82.3		P	50 - 300
1903781	GULL2-qPCR	68.6	61.5	P/P	50 - 300

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P326462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903811	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1903811	Chlorophyll-a, Corrected	5.10	Sample	P	0 - 25
1903811	Chlorophyll-a, Uncorrected	5.87	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P328003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904117	HF183-qPCR	15.6	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P326292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903781	GULL2-qPCR	10.8	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

Lab Sample ID: 1903778
Field Sample ID: G4NW0415

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.1	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	114	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1903779
 Field Sample ID: G4NW0415DUPLICATE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	100	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	109	P	50 - 300

Lab Sample ID: 1903781
 Field Sample ID: G5NW0045

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	103	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS
				LCS				
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio						0.0	
	Chlorophyll-a, Corrected	96.8					5.10	
	Chlorophyll-a, Uncorrected						5.87	
SOP-PCR-1.0	HF183-qPCR	113	108	114	117	84.8		15.6
				83.5				
SOP-PCR-1.2	GULL2-qPCR	86.2	84.7	80.6	82.3	68.6		10.8
				61.5				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1903769, 1903770, 1903771, 1903772, 1903773
SM 9223 Quanti-Tray / E71969	Escherichia coli by Colilert 18 Quanti-Tray method by UWF Overflow Laboratory for NWD	1903774, 1903775, 1903776, 1903777
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1903778, 1903779
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium genetic marker with quantitative polymerase chain reaction	1903778, 1903779, 1903781
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1903778, 1903779, 1903781

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	06/06/2017	06/06/2017 13:12	Brian Cumbie	06/08/2017	Kim M. Spencer	1903769, 1903770, 1903771, 1903772, 1903773
SM 9223 Quanti-Tray	06/05/2017			06/05/2017 15:58	UWF Lab	1903774
	06/05/2017			06/05/2017 15:59	UWF Lab	1903775
	06/05/2017			06/05/2017 16:00	UWF Lab	1903776
	06/05/2017			06/05/2017 16:01	UWF Lab	1903777
SOP-PCR-1.0	06/06/2017	06/06/2017 13:31	Puja Jasrotia	07/11/2017	Puja Jasrotia	1903778, 1903779
SOP-PCR-1.2	06/06/2017	06/06/2017 13:31	Avril Wood	06/13/2017	Sarah Menz	1903778, 1903779, 1903781
SOP-PCR-4.0	06/06/2017	06/06/2017 13:31	Sarah Menz	07/06/2017	Puja Jasrotia	1903778, 1903779, 1903781