

Biological Analysis Report

NW-DIST-2017-08-08-02

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

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Laurel Hill Run WBID 42 100 101 35A 49 92 117**
Request ID: **RQ-2017-08-07-26**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Cheryl Swanson - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
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Phone (850) 245-8177

Certified by: Jennifer Walters, Environmental Manager

Date Certified: 29-DEC-2017 13:06



NON-CONFORMANCE REPORT INCLUDED

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: Pond Creek in McCloud Bay @ Hwy 393

Collection Date/Time: 08/07/2017 11:10

Field ID: G4NW0349

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919574	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.56	I	ug/L	P330115	

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: Long Creek upstream of Long Road

Collection Date/Time: 08/07/2017 11:50

Field ID: G4NW0308

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919575	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.58	I	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.61	I	ug/L	P330115	

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: Pine Log Creek upstream of Long Road

Collection Date/Time: 08/07/2017 12:10

Field ID: G4NW0315

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919576	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P330115	

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 Br. Pine Log Creek

Collection Date/Time: 08/07/2017 12:50

Field ID: G4NW0208

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919577	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.4		ug/L	P330115	
		Phaeophytin-a	0.55	I	ug/L	P330115	
		Chlorophyll-a, Uncorrected	4.8		ug/L	P330115	

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: Eight Mile Ck. @ CR 181

Collection Date/Time: 08/07/2017 13:20

Field ID: G3NW0136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919578	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.44	I	ug/L	P330115	

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: Caney Creek @ Hwy 2A

Collection Date/Time: 08/07/2017 13:55

Field ID: G4NW0397

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919579	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.57	I	ug/L	P330115	

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: Turkey Creek @ Williams Rd.

Collection Date/Time: 08/07/2017 14:35

Field ID: G4NW0409

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919580	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.0		ug/L	P330115	
		Phaeophytin-a	1.3	I	ug/L	P330115	
		Chlorophyll-a, Uncorrected	4.8		ug/L	P330115	

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: Turkey Creek @ Williams Rd.

Collection Date/Time: 08/07/2017 14:35

Field ID: G4NW0409

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919604	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1354		MPN/100 mL		

Sample Location: Turkey Creek @ Williams Rd.

Collection Date/Time: 08/07/2017 14:35

Field ID: G4NW0409

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919607	SOP-PCR-1.0	HF183-qPCR**	58	T	GEU/100 mL	P331321	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Turkey Creek @ Williams Rd. Duplicate

Collection Date/Time: 08/07/2017 14:40

Field ID: G4NW0409DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919581	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.1		ug/L	P330115	
		Phaeophytin-a	0.67	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	3.6		ug/L	P330115	

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: Turkey Creek @ Williams Rd. Duplicate

Collection Date/Time: 08/07/2017 14:40

Field ID: G4NW0409DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919605	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1421		MPN/100 mL		

Sample Location: Field Blank

Collection Date/Time: 08/07/2017 14:45

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919582	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P330115	
		Phaeophytin-a	0.40	U	ug/L	P330115	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P330115	

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 0.32 for Chl:Ph Ratio, 0.55 U for Chl-a Corrected, 0.40 U for Chl-a Uncorrected, and 0.40 U for Phaeophytin-a.
Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: Field Blank

Collection Date/Time: 08/07/2017 14:45

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919606	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1	U	MPN/100 mL		

Non-Conformance Report

NCR ID: 6595

Event(s)

NW-DIST-2017-08-08-02

Job(s)

TLH-2017-08-08-35

Sample(s)

1919568

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Sample Integrity

Observation: Sample container received with loose cap.

Sample arrived with low sample volume.

Resolution: The appropriate supervisor (Virginia Brown) was notified. Data will be qualified as appropriate.

Authorized by/Date: Bettina S. Steinbock 8/29/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P330115

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: P331321

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P330115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	106		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P331321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	93.0	54.7	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P331321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919607	HF183-qPCR	53.3		P	50 - 175
1921799	HF183-qPCR	58.4		P	50 - 175
1927980	HF183-qPCR	86.5		P	50 - 175
1927981	HF183-qPCR	89.6		P	50 - 175
1927982	HF183-qPCR	80.6	85.5	P/P	50 - 175
1928302	HF183-qPCR	89.6		P	50 - 175
1928303	HF183-qPCR	77.9		P	50 - 175
1928363	HF183-qPCR	76.9		P	50 - 175
1928530	HF183-qPCR	82.2		P	50 - 175
1928747	HF183-qPCR	87.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P331321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927982	HF183-qPCR	5.85	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: 1919607
Field Sample ID: G4NW0409

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	56.1	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision	
							LCS	SMP
SM 10200 H (mod.)	Chlorophyll-a, Corrected	106						
SOP-PCR-1.0	HF183-qPCR	54.7	93.0	86.5	89.6	80.6		5.85
				85.5				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1919574, 1919575, 1919576, 1919577, 1919578, 1919579, 1919580, 1919581, 1919582
SM 9223 Quanti-Tray / E71969	Escherichia coli by Colilert 18 Quanti-Tray method by UWF Overflow Laboratory for NWD	1919604, 1919605, 1919606
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1919607
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1919607

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	08/08/2017	08/08/2017 13:53	Cathy Sherrer	08/11/2017	Kim M. Spencer	1919574, 1919575, 1919576, 1919577, 1919578, 1919579, 1919580, 1919581, 1919582
SM 9223 Quanti-Tray	08/07/2017	08/07/2017 17:20		08/08/2017 13:48	UWF Lab	1919604, 1919605, 1919606
SOP-PCR-1.0	08/08/2017	08/08/2017 14:00	Avril Wood	09/15/2017	Puja Jasrotia	1919607
SOP-PCR-4.0	08/08/2017	08/08/2017 14:00	Avril Wood	09/13/2017	Puja Jasrotia	1919607