

Biological Analysis Report

NE-DIST-2018-01-17-03

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Gainesville
6815 SW Archer Road
Gainesville, Florida 32608
DOH Accreditation E82001

Event Description: **Suw 3_2018**
Request ID: **RQ-2018-01-15-22**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Jennifer Walters, Environmental Manager

Date Certified: 28-FEB-2018 13:59



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: Hague Br. Trib. @ US 441 80m W of 77th Terrace

Collection Date/Time: 01/16/2018 12:30

Field ID: 21030152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959965	EPA 1603	Escherichia coli-Membrane Filter	490		cfu/100 mL		

Sample Location: Hague Br. Trib. @ US 441 80m W of 77th Terrace

Collection Date/Time: 01/16/2018 12:30

Field ID: 21030152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959962	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	I	ug/L	P338805	RPD
		Phaeophytin-a	0.50	U	ug/L	P338805	
		Chlorophyll-a, Uncorrected	1.4	I	ug/L	P338805	RPD
1959971	SOP-PCR-1.0	HF183-qPCR**	70	T	GEU/100 mL	P340022	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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: Fivemile Creek @ 231A

Collection Date/Time: 01/16/2018 09:35

Field ID: 21030130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959958	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.76	U	ug/L	P338805	RPD
		Phaeophytin-a	0.55	U	ug/L	P338805	
		Chlorophyll-a, Uncorrected	0.55	U	ug/L	P338805	RPD

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: Fivemile Creek @ 239A

Collection Date/Time: 01/16/2018 09:35

Field ID: 21030301

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959966	EPA 1603	Escherichia coli-Membrane Filter	440		cfu/100 mL		

Sample Location: Rocky Creek @ 156

Collection Date/Time: 01/16/2018 10:45

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959959	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.69	U	ug/L	P338805	RPD
		Phaeophytin-a	0.50	U	ug/L	P338805	
		Chlorophyll-a, Uncorrected	0.50	U	ug/L	P338805	RPD

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: Rocky Creek @ 156

Collection Date/Time: 01/16/2018 10:45

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959967	EPA 1603	Escherichia coli-Membrane Filter	2400		cfu/100 mL		

Sample Location: Rhuda Branch @ 192 Ave (NW 8th Terrace)

Collection Date/Time: 01/16/2018 11:30

Field ID: 21030146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959960	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.69	U	ug/L	P338805	RPD
		Phaeophytin-a	0.50	U	ug/L	P338805	
		Chlorophyll-a, Uncorrected	0.71	I	ug/L	P338805	RPD

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: Rhuda Branch @ 192 Ave (NW 8th Terrace)

Collection Date/Time: 01/16/2018 11:30

Field ID: 21030146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959968	EPA 1603	Escherichia coli-Membrane Filter	170	B	cfu/100 mL		

Sample Location: Lake Kanapaha 300m N of 56th

Collection Date/Time: 01/16/2018 13:30

Field ID: 20030925

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959961	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.6	AJ	ug/L	P338805	RPD
		Phaeophytin-a	1.6		ug/L	P338805	
		Chlorophyll-a, Uncorrected	8.7	AJ	ug/L	P338805	RPD

Ref. Method and Comment:

SM 10200 H (mod.): Lab duplicate result is 1.4 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample. Chl-a uncorrected and chl-a corrected results are J-qualified due to a lab duplicate RPD failure.

Sample Location: Lake Kanapaha 300m N of 56th

Collection Date/Time: 01/16/2018 13:30

Field ID: 20030925

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1959969	EPA 1603	Escherichia coli-Membrane Filter	10	B	cfu/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P338805

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.76	U	ug/L
Chlorophyll-a, Uncorrected	0.55	U	ug/L
Phaeophytin-a	0.55	U	ug/L

Reference Method: SOP-PCR-1.0

Batch ID: P340022

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P340022

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: P338805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	94.6		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	111	117	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959971	HF183-qPCR	111		P	50 - 175
1961507	HF183-qPCR	103		P	50 - 175
1961508	HF183-qPCR	109		P	50 - 175
1961601	HF183-qPCR	121		P	50 - 175
1961840	HF183-qPCR	104		P	50 - 175
1961841	HF183-qPCR	99.5		P	50 - 175
1962103	HF183-qPCR	92.8		P	50 - 175
1962106	HF183-qPCR	87.9		P	50 - 175
1963115	HF183-qPCR	94.8		P	50 - 175
1963116	HF183-qPCR	101		P	50 - 175
1968122	HF183-qPCR	98.0		P	50 - 175
1968560	HF183-qPCR	98.7	118	P/P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P338805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959961	Chlorophyll-a, Corrected	35.5	Sample	F	0 - 25
1959961	Chlorophyll-a, Uncorrected	32.9	Sample	F	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
 Batch ID: P340022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968560	HF183-qPCR	17.8	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: 1959971
 Field Sample ID: 21030152

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	94.6						35.5	
	Chlorophyll-a, Uncorrected							32.9	
SOP-PCR-1.0	HF183-qPCR	117	111	98.0	111	103			17.8
				109					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E82001	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Gainesville Overflow Laboratories for NED	1959965, 1959966, 1959967, 1959968, 1959969
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1959958, 1959959, 1959960, 1959961, 1959962
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1959971
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1959971

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	01/16/2018	01/16/2018 16:32		01/17/2018 18:23	AEL - Gainesville	1959965, 1959966, 1959967, 1959968, 1959969
SM 10200 H (mod.)	01/17/2018	01/17/2018 17:15	Carina A. Tull	01/24/2018	Jennifer Mihalic	1959958, 1959959
	01/17/2018	01/18/2018 07:10	Cathy Sherrer	01/24/2018	Jennifer Mihalic	1959960, 1959961, 1959962
SOP-PCR-1.0	01/17/2018	01/17/2018 14:45	Angela Smith	02/21/2018	Sarah Menz	1959971
SOP-PCR-4.0	01/17/2018	01/17/2018 14:45	Avril Wood	02/15/2018	Puja Jasrotia	1959971