

Biological Analysis Report

NE-DIST-2017-07-12-02

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

Overflow Analyses Performed By:
Flowers Chemical Laboratories Inc. - North
812 S.W. Harvey Greene Drive
Madison, Florida 32341
DOH Accreditation E82405

Event Description: **Suwannee North 2**

Request ID: **RQ-2017-07-10-09**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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This Report replaces the previous Report Serial Number: 0098692

Revision certified by: Jennifer Walters, Environmental Manager

Date Certified: 25-OCT-2017 11:40



Report Comments:
Corrected prep and analysis dates/times.

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: FALLING CREEK @ US 441

Collection Date/Time: 07/11/2017 08:45

Field ID: G1NE0279 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912946	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P328693	
		Phaeophytin-a	0.40	U	ug/L	P328693	
		Chlorophyll/Phaeophytin Ratio	2.1			P328693	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P328693	
1912949	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	162		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: FALLING CREEK @ US 441

Collection Date/Time: 07/11/2017 08:45

Field ID: G1NE0279 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912962	SOP-PCR-1.0	HF183-qPCR**	28	T	GEU/100 mL	P328342	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: DEEP CREEK @ US 441

Collection Date/Time: 07/11/2017 09:15

Field ID: G1NE0267 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912947	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P328693	
		Phaeophytin-a	0.40	U	ug/L	P328693	
		Chlorophyll/Phaeophytin Ratio	1.5			P328693	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P328693	
1912950	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	13.1		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: DEEP CREEK @ US 441

Collection Date/Time: 07/11/2017 09:15

Field ID: G1NE0267 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912958	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: LITTLE CREEK @ US 441

Collection Date/Time: 07/11/2017 09:40

Field ID: G1NE0251 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912948	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.59	I	ug/L	P328693	
		Phaeophytin-a	0.48	I	ug/L	P328693	
		Chlorophyll/Phaeophytin Ratio	1.4			P328693	
		Chlorophyll-a, Uncorrected	0.93	I	ug/L	P328693	
1912951	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	67.0		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: LITTLE CREEK @ US 441

Collection Date/Time: 07/11/2017 09:40

Field ID: G1NE0251 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912959	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: HUNTERS CREEK @ SR 135

Collection Date/Time: 07/11/2017 10:00

Field ID: G1NE0384 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912957	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	77.6		MPN/100 mL		
1912963	SOP-PCR-1.0	HF183-qPCR**	71	U	GEU/100 mL	P328342	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:
 SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: SWIFT CREEK @ CR 25A

Collection Date/Time: 07/11/2017 10:35

Field ID: G1NE0327 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912954	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	84.2		MPN/100 mL		
1912960	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: CAMP BRANCH @ CR 25A

Collection Date/Time: 07/11/2017 10:50

Field ID: G1NE0269 07112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912955	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	146		MPN/100 mL		
1912961	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P328693

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: P328342

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: P328693

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P328342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	72.3	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P328342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905621	HF183-qPCR	101		P	50 - 175
1905622	HF183-qPCR	113		P	50 - 175
1905625	HF183-qPCR	83.7		P	50 - 175
1906223	HF183-qPCR	114		P	50 - 175
1910229	HF183-qPCR	111		P	50 - 175
1910583	HF183-qPCR	90.7		P	50 - 175
1912962	HF183-qPCR	92.0		P	50 - 175
1912963	HF183-qPCR	74.0		P	50 - 175
1913038	HF183-qPCR	129	112	P/P	50 - 175
1913039	HF183-qPCR	94.6		P	50 - 175
1913238	HF183-qPCR	82.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P328693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912925	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1912925	Chlorophyll-a, Corrected	4.61	Sample	P	0 - 25
1912925	Chlorophyll-a, Uncorrected	2.84	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P328342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913038	HF183-qPCR	13.9	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: 1912962
 Field Sample ID: G1NE0279 07112017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1912962
Field Sample ID: G1NE0279 07112017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.3	P	50 - 300

Lab Sample ID: 1912963
Field Sample ID: G1NE0384 07112017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	121	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	106			4.61	
	Chlorophyll-a, Uncorrected				2.84	
SOP-PCR-1.0	HF183-qPCR	72.3 117	92.0 74.0 129 112			13.9

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1912946, 1912947, 1912948
SM 9223 Quanti-Tray / E82405	Escherichia coli by Colilert 18 Quanti-Tray method by FlowersOverflow Laboratory for Northeast District	1912949, 1912950, 1912951, 1912954, 1912955, 1912957
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1912962, 1912963
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1912958, 1912959, 1912960, 1912961, 1912962, 1912963

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	07/12/2017	07/12/2017 14:20	Amelia G. Rankin	07/18/2017	Jennifer Mihalic	1912946, 1912947, 1912948
SM 9223 Quanti-Tray	07/11/2017	07/11/2017 14:30		07/12/2017 09:03	Flower-MAD	1912949, 1912950, 1912951, 1912954, 1912955, 1912957
SOP-PCR-1.0	07/12/2017	07/12/2017 13:30	Sarah Menz	07/18/2017	Puja Jasrotia	1912962, 1912963
SOP-PCR-4.0	07/12/2017	07/12/2017 13:30	Avril Wood	08/14/2017	Puja Jasrotia	1912958, 1912959, 1912960, 1912961, 1912962, 1912963