

Biological Analysis Report

NE-DIST-2017-04-26-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
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: **Gville 1-4/25/17**
Request ID: **RQ-2017-04-17-10**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way W
Suite 100
Jacksonville, FL 32256-7577
Attn: Nicole Frederick

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
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Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 31-MAY-2017 14:05



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: Lake Alice Outlet @ Gale Lemmeron Rd.

Collection Date/Time: 04/25/2017 10:55

Field ID: G1NE0206 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892627	SM 10200 H (mod.)	Chlorophyll-a, Corrected	18		ug/L	P324399	
		Phaeophytin-a	3.9		ug/L	P324399	
		Chlorophyll/Phaeophytin Ratio	1.6			P324399	
		Chlorophyll-a, Uncorrected	21		ug/L	P324399	

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: Lake Alice Outlet @ Gale Lemmeron Rd.

Collection Date/Time: 04/25/2017 10:55

Field ID: G1NE0206 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892629	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P323807	MS
	SOP-PCR-1.2	GULL2-qPCR**	5.6E+03	U	TSC/100 mL	P323807	RPD
	SOP-PCR-1.3	GFD-purified-qPCR**	1.3E+04	UJ	TSC/100 mL	P324456	LCS, MS, RPD
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P323807	

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

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

SOP-PCR-1.3: No amplification of GFD marker. Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: No amplification of BACR marker.

Sample Location: Hogtown Creek @ SW 20th Ave

Collection Date/Time: 04/25/2017 11:55

Field ID: G1NE0871 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892630	SOP-PCR-1.0	HF183-qPCR**	250	T	GEU/100 mL	P323807	MS
1899630	EPA 1603	Escherichia coli-Membrane Filter	715	B	cfu/100 mL		

Sample Location: Little Hatchett Creek @ SR 24

Collection Date/Time: 04/25/2017 09:45

Field ID: G1NE0083 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892628	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P324399	
		Phaeophytin-a	0.40	U	ug/L	P324399	
		Chlorophyll/Phaeophytin Ratio	1.6			P324399	
		Chlorophyll-a, Uncorrected	1.5		ug/L	P324399	

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 Hatchett Creek @ SR 24

Collection Date/Time: 04/25/2017 09:45

Field ID: G1NE0083 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892631	SOP-PCR-1.0	HF183-qPCR**	3.02E+04		GEU/100 mL	P323807	MS

Sample Location: Tumblin Creek @ SW 14th

Collection Date/Time: 04/25/2017 10:40

Field ID: G1NE0856 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892632	SOP-PCR-1.0	HF183-qPCR**	71	U	GEU/100 mL	P323807	MS
	SOP-PCR-1.2	GULL2-qPCR**	4.2E+03	U	TSC/100 mL	P323807	RPD
	SOP-PCR-1.3	GFD-purified-qPCR**	1.0E+04	U	TSC/100 mL	P324456	LCS, MS, RPD
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P323807	

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.
SOP-PCR-1.2: No amplification of GULL2 marker.
SOP-PCR-1.3: No amplification of GFD marker.
SOP-PCR-1.4: No amplification of BACR marker.

Sample Location: G1NE0083

Collection Date/Time: 04/25/2017 09:45

Field ID: G1NE0083 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899627	EPA 1603	Escherichia coli-Membrane Filter	2050		cfu/100 mL		

Sample Location: G1NE0206

Collection Date/Time: 04/25/2017 10:55

Field ID: G1NE0206 04252017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899628	EPA 1603	Escherichia coli-Membrane Filter	92		cfu/100 mL		

Sample Location: G1NE0856

Collection Date/Time: 04/25/2017 10:40

Field ID: G1NE0856 0425201

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899629	EPA 1603	Escherichia coli-Membrane Filter	2200		cfu/100 mL		

Non-Conformance Report

NCR ID: 6446

Event(s)

NE-DIST-2017-04-26-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: The glyphosate analysis was not logged in due to confusing and incomplete submittal forms.

Resolution: Nicole Frederick and Jeremy Parrish were notified about the situation. Jeremy Parrish elected to not analyze for glyphosate, which was out of hold time.

Authorized by/Date: Colin Wright 5/24/2017

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P324399

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: P323807

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

Reference Method: SOP-PCR-1.2
Batch ID: P323807

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

Reference Method: SOP-PCR-1.3
Batch ID: P324456

Component	Result	Code	Units
GFD-purified-qPCR	4.0E+04	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P323807

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P324399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.4		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P323807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	87.4		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P323807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	94.2	85.0	P/P	50 - 300

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.3
 Batch ID: P324456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	118	18.6	P/F	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P323807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	66.1		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P323807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1885146	HF183-qPCR	88.4		P	50 - 175
1885147	HF183-qPCR	97.4		P	50 - 175
1891900	HF183-qPCR	83.5		P	50 - 175
1891901	HF183-qPCR	87.3		P	50 - 175
1892526	HF183-qPCR	89.5	91.5	P/P	50 - 175
1892629	HF183-qPCR	91.7		P	50 - 175
1892630	HF183-qPCR	79.2		P	50 - 175
1892631	HF183-qPCR	221		F	50 - 175
1892632	HF183-qPCR	77.7		P	50 - 175
1893784	HF183-qPCR	83.4		P	50 - 175

Reference Method: SOP-PCR-1.2
 Batch ID: P323807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892629	GULL2-qPCR	102		P	50 - 300
1892632	GULL2-qPCR	98.7		P	50 - 300

Reference Method: SOP-PCR-1.3
 Batch ID: P324456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888121	GFD-purified-qPCR	73.8	118	P/P	50 - 175
1888671	GFD-purified-qPCR	85.6		P	50 - 175
1888810	GFD-purified-qPCR	46.9		F	50 - 175
1889571	GFD-purified-qPCR	141		P	50 - 175
1892528	GFD-purified-qPCR	41.0		F	50 - 175
1892629	GFD-purified-qPCR	13.7		F	50 - 175
1892632	GFD-purified-qPCR	87.5		P	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P323807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892629	BacR-qPCR	77.9		P	50 - 175
1892632	BacR-qPCR	69.0		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P324399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892658	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1892658	Chlorophyll-a, Corrected	0.0988	Sample	P	0 - 25
1892658	Chlorophyll-a, Uncorrected	1.01	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P323807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892526	HF183-qPCR	2.30	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
 Batch ID: P323807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888810	GULL2-qPCR	27.7	Spike	F	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P324456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888121	GFD-purified-qPCR	46.3	Spike	F	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P323807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896107	BacR-qPCR	14.1	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: 1892629
 Field Sample ID: G1NE0206 04252017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	79.6	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	80.9	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	97.9	P	50 - 300

Lab Sample ID: 1892630
 Field Sample ID: G1NE0871 04252017

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

Lab Sample ID: 1892630
Field Sample ID: G1NE0871 04252017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	55.7	P	50 - 300

Lab Sample ID: 1892631
Field Sample ID: G1NE0083 04252017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	112	P	50 - 300

Lab Sample ID: 1892632
Field Sample ID: G1NE0856 04252017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	110	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	120	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	98.4						0.0988	
	Chlorophyll-a, Uncorrected							1.01	
SOP-PCR-1.0	HF183-qPCR	87.4		88.4	97.4	83.5			2.30
				87.3					
SOP-PCR-1.2	GULL2-qPCR	85.0	94.2	102	98.7				27.7
SOP-PCR-1.3	GFD-purified-qPCR	18.6	118	141	73.8	118			46.3
				46.9					
SOP-PCR-1.4	BacR-qPCR	66.1		77.9	69.0				14.1

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	1899627, 1899628, 1899629, 1899630
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1892627, 1892628
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1892629, 1892630, 1892631, 1892632
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium genetic marker with quantitative polymerase chain reaction	1892629, 1892632
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter genetic marker with quantitative polymerase chain reaction	1892629, 1892632
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes genetic marker with quantitative polymerase chain reaction	1892629, 1892632

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	04/25/2017			04/25/2017 13:43	AEL - Gainesville	1899627, 1899628, 1899629, 1899630
SM 10200 H (mod.)	04/26/2017	04/26/2017 13:55	Jennifer Mihalic	05/02/2017	Brian Cumbie	1892627, 1892628
SOP-PCR-1.0	04/26/2017	04/26/2017 13:35	Puja Jasrotia	05/01/2017	Puja Jasrotia	1892629, 1892631, 1892632
	04/26/2017	04/26/2017 13:35	Puja Jasrotia	05/18/2017	Puja Jasrotia	1892630
SOP-PCR-1.2	04/26/2017	04/26/2017 13:35	Puja Jasrotia	05/22/2017	Sarah Menz	1892629, 1892632
SOP-PCR-1.3	04/26/2017	04/26/2017 13:35	Puja Jasrotia	05/23/2017	Sarah Menz	1892629, 1892632
SOP-PCR-1.4	04/26/2017	04/26/2017 13:35	Puja Jasrotia	05/22/2017	Sarah Menz	1892629, 1892632