

Biological Analysis Report

WAS-SECT-2018-01-18-01

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

Event Description: **Black, Freeman, Ochlockonee, Quincy, Juniper**

Request ID: **RQ-2018-01-15-28**

Customer: **WAS-SECT**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Puja Jasrotia,

Date Certified: 28-FEB-2018 12:37



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, Microbiology and Molecular.

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: OCHLOCKONEE RIVER UPSTREAM OF US 90 Collection Date/Time: 01/18/2018 14:05

Field ID: G1WA0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960475	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.2		ug/L	P338815	
		Phaeophytin-a	1.9		ug/L	P338815	
		Chlorophyll-a, Uncorrected	7.6		ug/L	P338815	

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: OCHLOCKONEE RIVER UPSTREAM OF US 90 Collection Date/Time: 01/18/2018 14:05

Field ID: G1WA0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960479	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	148.3		MPN/100 mL	P339770	

Sample Location: QUINCY CREEK UPSTREAM OF SR 268 Collection Date/Time: 01/18/2018 10:00

Field ID: G1WA0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960476	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.78	I	ug/L	P338815	
		Phaeophytin-a	0.40	U	ug/L	P338815	
		Chlorophyll-a, Uncorrected	0.93	I	ug/L	P338815	

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: QUINCY CREEK UPSTREAM OF SR 268 Collection Date/Time: 01/18/2018 10:00

Field ID: G1WA0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960480	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	410.6		MPN/100 mL	P339770	

Sample Location: QUINCY CREEK UPSTREAM OF SR 268 Collection Date/Time: 01/18/2018 10:00

Field ID: G1WA0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960483	SOP-PCR-1.0	HF183-qPCR**	380	I	GEU/100 mL	P338480	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: QUINCY CREEK UPSTREAM OF SR 65 Collection Date/Time: 01/18/2018 10:55

Field ID: G1WA0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960477	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.60	I	ug/L	P338815	
		Phaeophytin-a	0.40	U	ug/L	P338815	
		Chlorophyll-a, Uncorrected	0.73	I	ug/L	P338815	

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: QUINCY CREEK UPSTREAM OF SR 65 Collection Date/Time: 01/18/2018 10:55

Field ID: G1WA0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960481	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	789.0		MPN/100 mL	P339770	

Sample Location: QUINCY CREEK UPSTREAM OF SR 65

Collection Date/Time: 01/18/2018 10:55

Field ID: G1WA0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960484	SOP-PCR-1.0	HF183-qPCR**	100	T	GEU/100 mL	P338480	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: QUINCY CREEK 100 METERS UPSTREAM OF RALPH STRONG RD.

Collection Date/Time: 01/18/2018 11:20

Field ID: G1WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960478	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.72	I	ug/L	P338815	
		Phaeophytin-a	0.40	U	ug/L	P338815	
		Chlorophyll-a, Uncorrected	0.88	I	ug/L	P338815	

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 0.69 I for Chl-a Corrected, 0.88 I 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: QUINCY CREEK 100 METERS UPSTREAM OF RALPH STRONG RD.

Collection Date/Time: 01/18/2018 11:20

Field ID: G1WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960482	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	727.0		MPN/100 mL	P339770	

Sample Location: QUINCY CREEK 100 METERS UPSTREAM OF RALPH STRONG RD.

Collection Date/Time: 01/18/2018 11:20

Field ID: G1WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960485	SOP-PCR-1.0	HF183-qPCR**	200	I	GEU/100 mL	P338480	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: BLACK CREEK UPSTREAM OF BLOXHAM CUTOFF

Collection Date/Time: 01/18/2018 08:05

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960527	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P338817	
		Phaeophytin-a	0.40	U	ug/L	P338817	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P338817	

Sample Location: BLACK CREEK UPSTREAM OF BLOXHAM CUTOFF

Collection Date/Time: 01/18/2018 08:05

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960530	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	142.1	Q	MPN/100 mL	P339770	

Sample Location: FREEMAN CREEK UPSTREAM OF SR 267
 (BLOXHAM CUTOFF)

Collection Date/Time: 01/18/2018 08:40

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960528	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P338817	
		Phaeophytin-a	0.40	U	ug/L	P338817	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P338817	

Sample Location: FREEMAN CREEK UPSTREAM OF SR 267
 (BLOXHAM CUTOFF)

Collection Date/Time: 01/18/2018 08:40

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960531	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	120.1		MPN/100 mL	P339770	

Sample Location: JUNIPER CREEK UPSTREAM OF JUNIPER
 CREEK RD.

Collection Date/Time: 01/18/2018 09:22

Field ID: G1WA0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960532	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	109.2		MPN/100 mL	P339770	

Sample Location: JUNIPER CREEK UPSTREAM OF JUNIPER
 CREEK RD.

Collection Date/Time: 01/18/2018 09:22

Field ID: G1WA0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960534	SOP-PCR-1.0	HF183-qPCR**	34	T	GEU/100 mL	P338480	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:
 SOP-PCR-1.0: Duplicate was analyzed and result is 140 U.

Sample Location: QUINCY CREEK UPSTREAM OF SR 267

Collection Date/Time: 01/18/2018 10:30

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960529	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.66	I	ug/L	P338817	
		Phaeophytin-a	0.40	U	ug/L	P338817	
		Chlorophyll-a, Uncorrected	0.79	I	ug/L	P338817	

Sample Location: QUINCY CREEK UPSTREAM OF SR 267

Collection Date/Time: 01/18/2018 10:30

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960533	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	426.0		MPN/100 mL	P339770	

Sample Location: QUINCY CREEK UPSTREAM OF SR 267

Collection Date/Time: 01/18/2018 10:30

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960535	SOP-PCR-1.0	HF183-qPCR**	67	T	GEU/100 mL	P338480	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Non-Conformance Report

NCR ID: 6877

Event(s)

WAS-SECT-2018-01-18-01

Job(s)

TLH-2018-01-18-99

Sample(s)

1960536

Test(s)

NCR Type: CUSTODY

NCR Category: Lost sample.

Observation: Sample lost in laboratory.

Analyses were not performed on sample due to it being misplaced after receipt.

Resolution: Curtis Musson was contacted, email attached to scanned files. Sample cancelled.

Authorized by/Date: Joshua Ayres 1/24/2018

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: P338815

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: SM 10200 H (mod.)

Batch ID: P338817

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: SM 9223 Quanti-Tray

Batch ID: P339770

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Reference Method: SOP-PCR-1.0

Batch ID: P338480

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P338815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.6		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P338817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	96.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P338480

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	107	121	P/P	50 - 175
HF183-qPCR	112	112	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956217	HF183-qPCR	90.6		P	50 - 175
1956355	HF183-qPCR	92.4		P	50 - 175
1956390	HF183-qPCR	95.9		P	50 - 175
1956391	HF183-qPCR	92.7		P	50 - 175
1956392	HF183-qPCR	86.3		P	50 - 175
1956534	HF183-qPCR	93.6		P	50 - 175
1960483	HF183-qPCR	103		P	50 - 175
1960484	HF183-qPCR	108		P	50 - 175
1960485	HF183-qPCR	93.8		P	50 - 175
1960534	HF183-qPCR	95.0	96.5	P/P	50 - 175
1960535	HF183-qPCR	94.6		P	50 - 175
1960643	HF183-qPCR	88.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P338817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960641	Chlorophyll-a, Corrected	8.15	Sample	P	0 - 25
1960641	Chlorophyll-a, Uncorrected	2.70	Sample	P	0 - 25
1960641	Phaeophytin-a	12.5	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SM 9223 Quanti-Tray
Batch ID: P339770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960040	Escherichia Coli-Quanti-Tray	10.3	Sample	P	0 - 80
1960443	Escherichia Coli-Quanti-Tray	18.0	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P338480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960534	HF183-qPCR	1.56	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: 1960483
Field Sample ID: G1WA0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	119	P	50 - 300

Lab Sample ID: 1960484
Field Sample ID: G1WA0049

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	117	P	50 - 300

Lab Sample ID: 1960485
Field Sample ID: G1WA0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	115	P	50 - 300

Lab Sample ID: 1960534
Field Sample ID: G1WA0059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	118	P	50 - 300

Lab Sample ID: 1960535
Field Sample ID: G1WA0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	128	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			Precision		
								LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	96.6								
	Chlorophyll-a, Corrected	96.2							8.15	
	Chlorophyll-a, Uncorrected								2.70	
	Phaeophytin-a								12.5	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray								10.3	18.0
SOP-PCR-1.0	HF183-qPCR	107	112	112	108	93.8	95.0			1.56
		121			96.5					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1960475, 1960476, 1960477, 1960478, 1960527, 1960528, 1960529
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	1960479, 1960480, 1960481, 1960482, 1960530, 1960531, 1960532, 1960533
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1960483, 1960484, 1960485, 1960534, 1960535
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1960483, 1960484, 1960485, 1960534, 1960535

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/18/2018	01/18/2018 15:51	Cathy Sherrer	01/24/2018	Jennifer Mihalic	1960475, 1960476, 1960477, 1960478, 1960527, 1960528, 1960529
SM 9223 Quanti-Tray	01/18/2018	01/18/2018 16:20	Peterson Janvier	01/19/2018 10:35	Kim M. Spencer	1960479, 1960480, 1960481, 1960482, 1960530, 1960531, 1960532, 1960533
SOP-PCR-1.0	01/18/2018	01/19/2018 13:00	Avril Wood	01/25/2018	Sarah Menz	1960483, 1960484, 1960485, 1960534, 1960535
SOP-PCR-4.0	01/18/2018	01/19/2018 13:00	Avril Wood	02/05/2018	Puja Jasrotia	1960483, 1960484, 1960485, 1960534, 1960535