

Biological Analysis Report

SE-DIST-2016-04-14-01

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

Event Description: **Blue_1pest_1blankC_1dupD**
Request ID: **RQ-2016-04-11-24**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

For additional information please contact
Loretta Wolfe - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Daisys Matthews - Molecular Biology
Cheryl Swanson - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8177

Certified by: Daisys Matthews,

Date Certified: 16-MAY-2016 09:04

A handwritten signature in cursive script that reads "D Matthews". The signature is written in dark ink on a white background.

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 group are included in this report: Chlorophyll/Grain Size/BOD.

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: NNR-3 SF Canal Study/122 (Broward)

Collection Date/Time: 04/13/2016 10:35

Field ID: G4SENNR3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789520	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.4	IJ	mg/L	P302590	LCS
1789528	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6		ug/L	P302684	
		Phaeophytin-a	0.40	U	ug/L	P302684	
		Chlorophyll/Phaeophytin Ratio	1.7			P302684	
		Chlorophyll-a, Uncorrected	2.9		ug/L	P302684	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

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: ICWW @ CR836

Collection Date/Time: 04/13/2016 11:35

Field ID: G4SE0063

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789524	SM 5210 B	Biochemical Oxygen Demand-5 Day	0.83	IJ	mg/L	P302590	LCS
1789532	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P302882	
		Phaeophytin-a	1.6		ug/L	P302882	
		Chlorophyll/Phaeophytin Ratio	1.3			P302882	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P302882	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

Sample Location: C-10 @ Sheridan

Collection Date/Time: 04/13/2016 12:25

Field ID: G4SE0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789525	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.1	IJ	mg/L	P302590	LCS
1789533	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.3		ug/L	P302882	
		Phaeophytin-a	2.8		ug/L	P302882	
		Chlorophyll/Phaeophytin Ratio	1.5			P302882	
		Chlorophyll-a, Uncorrected	8.2		ug/L	P302882	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

Sample Location: Duplicate

Collection Date/Time: 04/13/2016 12:35

Field ID: Duplicate

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789526	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.2	IJ	mg/L	P302590	LCS
1789534	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.4	A	ug/L	P302882	
		Phaeophytin-a	1.6	A	ug/L	P302882	
		Chlorophyll/Phaeophytin Ratio	1.6	A		P302882	
		Chlorophyll-a, Uncorrected	9.6	A	ug/L	P302882	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

Sample Location: C-10 Canal @ Stirling Rd.

Collection Date/Time: 04/13/2016 13:05

Field ID: G4SE0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789527	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.5	IJY	mg/L	P302590	LCS
1789535	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4		ug/L	P302882	
		Phaeophytin-a	3.0		ug/L	P302882	
		Chlorophyll/Phaeophytin Ratio	1.3			P302882	
		Chlorophyll-a, Uncorrected	4.2		ug/L	P302882	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits. See nonconformance report #5818.

Sample Location: 64 (Broward)

Collection Date/Time: 04/13/2016 14:10

Field ID: G4SEB064

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789521	SM 5210 B	Biochemical Oxygen Demand-5 Day	3.0	J	mg/L	P302590	LCS
1789529	SM 10200 H (mod.)	Chlorophyll-a, Corrected	25		ug/L	P302684	
		Phaeophytin-a	4.9		ug/L	P302684	
		Chlorophyll/Phaeophytin Ratio	1.6			P302684	
		Chlorophyll-a, Uncorrected	29		ug/L	P302684	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

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: Field Blank

Collection Date/Time: 04/13/2016 14:20

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789522	SM 5210 B	Biochemical Oxygen Demand-5 Day	0.20	UJ	mg/L	P302590	LCS
1789530	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P302684	
		Phaeophytin-a	0.40	U	ug/L	P302684	
		Chlorophyll/Phaeophytin Ratio	0.97			P302684	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P302684	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

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: New River (North Fork) @ NW 27th Ave.

Collection Date/Time: 04/13/2016 14:30

Field ID: G4SE0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1789523	SM 5210 B	Biochemical Oxygen Demand-5 Day	3.8	J	mg/L	P302590	LCS
1789531	SM 10200 H (mod.)	Chlorophyll-a, Corrected	42		ug/L	P302882	
		Phaeophytin-a	9.3		ug/L	P302882	
		Chlorophyll/Phaeophytin Ratio	1.6			P302882	
		Chlorophyll-a, Uncorrected	49		ug/L	P302882	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample. Refer to QA report for QC exceeding limits.

Non-Conformance Report

Non-Conformance Report

NCR ID: 5818

Event(s)

SE-DIST-2016-04-14-01

Job(s)

TLH-2016-04-14-43

Sample(s)

1789527

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Container for BOD-UNIN analysis collected at Site: C-10 Canal @ Stirling Rd., Field ID: G4SE0036 was received empty.

Resolution: Customer notified.
Chemistry supervisor notified. Chemistry is sharing the sample collected for nutrient analyses at Field ID: G4SE0036 with biology to run the BOD-UNIN analysis. Because the nutrient sample was acid preserved, the BOD-UNIN will be Y-qualified.

Authorised by/Date: Ramsey K. White 5/12/2016

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

Chemistry Tim Fitzpatrick (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P302684

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: P302882

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 5210 B

Batch ID: P302590

Component	Result	Code	Units
Biochemical Oxygen Demand-5 Day	0.20	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P302684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.9		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P302882

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.9		P	84 - 116

Reference Method: SM 5210 B
Batch ID: P302590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Biochemical Oxygen Demand-5 Day	81.3		F	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P302882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789534	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1789534	Chlorophyll-a, Corrected	0.277	Sample	P	0 - 25
1789534	Chlorophyll-a, Uncorrected	2.15	Sample	P	0 - 25
1789534	Phaeophytin-a	18.7	Sample	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 Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	87.9				
	Chlorophyll-a, Corrected	98.9			0.277	
	Chlorophyll-a, Uncorrected				2.15	
	Phaeophytin-a				18.7	
SM 5210 B	Biochemical Oxygen Demand-5 Day	81.3				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1789528, 1789529, 1789530, 1789531, 1789532, 1789533, 1789534, 1789535
SM 5210 B / E31780	BOD, NOT nitrogen-inhibited	1789520, 1789521, 1789522, 1789523, 1789524, 1789525, 1789526, 1789527

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	04/14/2016	04/14/2016 13:52	Meiqin Chen	04/20/2016	Kim M. Spencer	1789528, 1789529, 1789530
	04/14/2016	04/14/2016 13:52	Meiqin Chen	04/25/2016	Kim M. Spencer	1789531, 1789532, 1789533, 1789534, 1789535
SM 5210 B	04/14/2016			04/15/2016 08:30	Jennifer Mihalic	1789520, 1789521, 1789522, 1789523, 1789524, 1789525, 1789526
	04/14/2016			04/15/2016 12:00	Jennifer Mihalic	1789527