

Chemical Analysis Report

TLH-ROC-2018-08-27-01

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

Event Description: **B-b2 (WBID 3366A Waccasassa River)**
Request ID: **RQ-2018-04-30-24**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Date Certified: 11-SEP-2018 11:27



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: Nutrients.

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: WACCASASSA RIVER @ BOAT RAMP

Collection Date/Time: 08/27/2018 12:05

Field ID: G1TLHR0032

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020327	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P350939	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P351143	
	SM 2540 D-97	TSS	2	I	mg/L	P351072	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P351052	
2020328	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P350917	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P350892	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P351125	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P350954	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P350877	
2020329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P350831	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350939

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350917

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350892

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351125

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350954

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350831

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-97
Batch ID: P351143

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P351072

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351052

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P350877

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P351143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020144	Ammonia-N	95.4	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020337	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020368	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020176	Total-P	96.2	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020340	O-Phosphate-P	100	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351052

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020073	Fluoride	98.1	98.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019917	Organic Carbon	97.9	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020327	Turbidity	13.0	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020144	Ammonia-N	2.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020337	Kjeldahl Nitrogen	0.732	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020368	NO2NO3-N	1.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020176	Total-P	1.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020340	O-Phosphate-P	1.81	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020073	Total Alkalinity	0.102	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P351052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020073	Fluoride	0.477	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P350877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019917	Organic Carbon	0.666	Spike	P	0 - 20

* 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 Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86148

Included Lab Sample IDs: 2020329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86162

Included Lab Sample IDs: 2020328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86185

Included Lab Sample IDs: 2020328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86200

Included Lab Sample IDs: 2020327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86222

Included Lab Sample IDs: 2020328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86229

Included Lab Sample IDs: 2020328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	98.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86252

Included Lab Sample IDs: 2020327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86298

Included Lab Sample IDs: 2020328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A86303
Included Lab Sample IDs: 2020327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					13.0	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	95.4	98.4			2.59
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	104			0.732
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	100				1.23
EPA 365.1 Rev. 2.0	Total-P	97.2	96.2	95.0			1.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	100	98.3			1.81
SM 2320 B-97	Total Alkalinity	103				0.102	
SM 4500 F-C-97	Fluoride	97.7	98.1	98.3			0.477
SM 5310 B-00	Organic Carbon	95.6	97.9	97.1			0.666

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2020327
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2020328
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2020328
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2020328
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2020328
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2020329
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2020327
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2020327
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2020327
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2020328

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/27/2018			08/28/2018 15:32	Megan Treadwell	2020327
EPA 350.1 Rev. 2.0	08/27/2018			08/29/2018 13:15	Ping Hua	2020328
EPA 351.2 Rev. 2.0	08/27/2018	08/29/2018 15:30	Adrian Shelby	08/31/2018 10:05	Joseph Suarez	2020328
EPA 353.2 Rev. 2.0	08/27/2018			09/05/2018 13:21	Lauren Bottorf	2020328
EPA 365.1 Rev. 2.0	08/27/2018	08/30/2018 11:37	Sima Feizi	08/31/2018 07:43	Beverly Y. Sanders	2020328
EPA 365.1 Rev. 2.0 dissolved	08/27/2018			08/28/2018 13:33	Lipi Saha	2020329
SM 2320 B-97	08/27/2018			09/05/2018 20:22	Dale L. Simmons	2020327
SM 2540 D-97	08/27/2018			08/30/2018 14:22	Yijie Li	2020327
SM 4500 F-C-97	08/27/2018			08/31/2018 04:47	Dale L. Simmons	2020327
SM 5310 B-00	08/27/2018			08/29/2018 04:49	Megan Treadwell	2020328