

Chemical Analysis Report

SW-DIST-2022-07-22-03

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

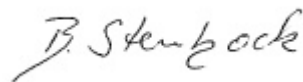
Event Description: **Run 16**
Request ID: **RQ-2022-07-18-09**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 10-AUG-2022 15:11



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Boggy Bayou South

Collection Date/Time: 07/21/2022 10:15

Field ID: G5SW0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2343531	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P417052	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P417217	
	SM 2540 D-2011	TSS	3	U	mg/L	P417483	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P417220	
2343533	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P417313	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P417279	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P417331	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P417096	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P417494	

Sample Location: Boggy Bayou North

Collection Date/Time: 07/21/2022 10:30

Field ID: G5SW0080

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2343532	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P417052	
	SM 2320 B-2011	Total Alkalinity	132		mg CaCO3/L	P417217	
	SM 2540 D-2011	TSS	5	I	mg/L	P417483	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P417220	
2343534	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P417420	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P417279	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P417332	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P417096	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P417494	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417052

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417313

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417279

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417331

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417332

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417096

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

Reference Method: SM 2320 B-2011
Batch ID: P417217

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-2011
Batch ID: P417483

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417494

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	91.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417279

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: P417331

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417332

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: P417096

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

Reference Method: SM 2320 B-2011
Batch ID: P417217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P417494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342195	Ammonia-N	105	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344026	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343452	Kjeldahl Nitrogen	99.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343212	NO2NO3-N	95.6	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343534	NO2NO3-N	100	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343187	Total-P	103	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343211	Fluoride	99.4	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344316	Organic Carbon	89.8	91.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343342	Turbidity	6.78	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342195	Ammonia-N	3.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344026	Ammonia-N	0.116	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343452	Kjeldahl Nitrogen	1.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343212	NO2NO3-N	1.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343534	NO2NO3-N	1.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343187	Total-P	1.69	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P417217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343211	Total Alkalinity	0.165	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P417483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343186	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343211	Fluoride	0.483	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344316	Organic Carbon	1.20	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113670

Included Lab Sample IDs: 2343531, 2343532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A113724

Included Lab Sample IDs: 2343531, 2343532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	98.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113724

Included Lab Sample IDs: 2343531, 2343532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113735

Included Lab Sample IDs: 2343533, 2343534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113763

Included Lab Sample IDs: 2343533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113767

Included Lab Sample IDs: 2343533, 2343534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113799

Included Lab Sample IDs: 2343533, 2343534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113803

Included Lab Sample IDs: 2343534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A113849

Included Lab Sample IDs: 2343533, 2343534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	90.8	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		Precision SMP	MS
					LCS	
EPA 180.1 Rev. 2.0	Turbidity	95.0			6.78	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	105	101		3.66
	Ammonia-N	91.0	100	99.8		0.116
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.0	101		1.66
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	95.6	94.6		1.05
	NO ₂ NO ₃ -N	99.5	100	96.5		1.93
EPA 365.1 Rev. 2.0	Total-P	103	103	105		1.69
SM 2320 B-2011	Total Alkalinity	100			0.165	
SM 2540 D-2011	TSS				6.67	
SM 4500-F- C-2011	Fluoride	101	99.4	98.6		0.483
SM 5310 B-2011	Organic Carbon	99.0	89.8	91.3		1.20

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2343531, 2343532
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2343533, 2343534
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2343533, 2343534
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2343533, 2343534
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2343533, 2343534
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2343531, 2343532
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2343531, 2343532
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2343531, 2343532
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2343533, 2343534

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	07/22/2022			07/22/2022 17:36	Anna M. Plaviak	2343531
	07/22/2022			07/22/2022 17:38	Anna M. Plaviak	2343532
EPA 350.1 Rev. 2.0	07/22/2022			07/28/2022 11:12	Ping Hua	2343533
	07/22/2022			07/29/2022 11:43	Ping Hua	2343534
EPA 351.2 Rev. 2.0	07/22/2022	07/28/2022 16:20	Simonne.V. Calhoun	07/29/2022 12:30	Samantha L Bates	2343533
	07/22/2022	07/28/2022 16:20	Simonne.V. Calhoun	07/29/2022 12:32	Samantha L Bates	2343534
EPA 353.2 Rev. 2.0	07/22/2022			07/27/2022 17:06	Touraj Touran	2343533
	07/22/2022			07/27/2022 17:13	Touraj Touran	2343534
EPA 365.1 Rev. 2.0	07/22/2022	07/25/2022 15:50	Adam P Silver	07/27/2022 14:23	James L Waggeberby	2343533
	07/22/2022	07/25/2022 15:50	Adam P Silver	07/27/2022 14:24	James L Waggeberby	2343534
SM 2320 B-2011	07/22/2022			07/27/2022 06:41	Dale L. Simmons	2343531
	07/22/2022			07/27/2022 06:54	Dale L. Simmons	2343532
SM 2540 D-2011	07/22/2022			07/26/2022 15:02	Yijie Li	2343531, 2343532
SM 4500-F- C-2011	07/22/2022			07/27/2022 01:39	Dale L. Simmons	2343531
	07/22/2022			07/27/2022 01:45	Dale L. Simmons	2343532
SM 5310 B-2011	07/22/2022			08/02/2022 03:59	Khloe J Berg	2343533
	07/22/2022			08/02/2022 04:18	Khloe J Berg	2343534