

Chemical Analysis Report

SW-DIST-2022-09-13-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **SMP: Wolf Branch**
Request ID: **RQ-2022-09-12-45**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 27-SEP-2022 12:46



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: Wolf Branch @ 12th Street NE

Collection Date/Time: 09/12/2022 10:30

Field ID: G1SW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355843	DEP SOP: NU-094-1	Color (true)	150		PCU	P419506	
	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P419497	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P419776	
		Sulfate	47		mg SO4/L	P419780	
	SM 2320 B-2011	Total Alkalinity	67	A	mg CaCO3/L	P419768	
	SM 2540 C-2011	TDS	207		mg/L	P419799	
	SM 2540 D-2011	TSS	4	I	mg/L	P419817	
	SM 4500-F- C-2011	Fluoride	0.29		mg F/L	P419772	
2355844	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P419721	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P419587	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P419708	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P419598	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P419714	
2355845	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.33		mg P/L	P419501	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P419506

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419497

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419587

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419708

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419598

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419501

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P419768

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

Reference Method: SM 2540 C-2011
Batch ID: P419799

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419817

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419714

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P419506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419497

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419708

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419598

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P419768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P419776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355806	Chloride	101		P	90 - 110
2355851	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P419780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355806	Sulfate	99.6		P	90 - 110
2355851	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P419721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355778	Ammonia-N	99.2	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P419708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355779	NO2NO3-N	91.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P419598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355858	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P419501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355702	O-Phosphate-P	95.0	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Batch ID: P419772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355843	Fluoride	98.2	98.2	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P419714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355648	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355807	Color (true)	0.859	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355586	Turbidity	7.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355851	Chloride	0.0367	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355851	Sulfate	0.238	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355778	Ammonia-N	0.698	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355706	Kjeldahl Nitrogen	0.873	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355779	NO2NO3-N	0.380	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355858	Total-P	0.652	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355702	O-Phosphate-P	0.0995	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P419768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355843	Total Alkalinity	0.566	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P419799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355474	TDS	2.74	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355843	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355648	Organic Carbon	1.99	Sample	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: A114694

Included Lab Sample IDs: 2355843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A114695

Included Lab Sample IDs: 2355845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.7	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A114696

Included Lab Sample IDs: 2355843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114761

Included Lab Sample IDs: 2355844

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114777

Included Lab Sample IDs: 2355844

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

Reference Method: SM 5310 B-2011

Run ID: A114782

Included Lab Sample IDs: 2355844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114783

Included Lab Sample IDs: 2355844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	98.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114789

Included Lab Sample IDs: 2355843

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114800

Included Lab Sample IDs: 2355844

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

Reference Method: SM 2320 B-2011

Run ID: A114801

Included Lab Sample IDs: 2355843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	96.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114801

Included Lab Sample IDs: 2355843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	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	
DEP SOP: NU-094-1	Color (true)	101				0.859	
EPA 180.1 Rev. 2.0	Turbidity	100				7.96	
EPA 300.0 Rev. 2.1	Chloride	102	100	101		0.0367	
	Sulfate	102	100	99.6		0.238	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	99.2	100			0.698
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107					0.873
EPA 353.2 Rev. 2.0	NO2NO3-N	100	91.0				0.380
EPA 365.1 Rev. 2.0	Total-P	104	104	104			0.652
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	95.0	94.9			0.0995
SM 2320 B-2011	Total Alkalinity	101				0.566	
SM 2540 C-2011	TDS					2.74	
SM 4500-F- C-2011	Fluoride	100	98.2	98.2			0.0
SM 5310 B-2011	Organic Carbon	101	102			1.99	

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2355843
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2355843
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2355843
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2355843
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2355844
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2355844
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2355844
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2355844
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2355845
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2355843
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2355843
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2355843
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2355843
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2355844

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	09/13/2022			09/13/2022 16:08	Anna M. Plaviak	2355843
EPA 180.1 Rev. 2.0	09/13/2022			09/13/2022 13:42	Chandler E Cox	2355843
EPA 300.0 Rev. 2.1	09/13/2022			09/17/2022 09:43	Anna M. Plaviak	2355843
EPA 350.1 Rev. 2.0	09/13/2022			09/16/2022 10:39	Judith K. Clark	2355844
EPA 351.2 Rev. 2.0	09/13/2022	09/15/2022 13:58	Alexandra J Mattheus	09/16/2022 14:34	Alexandra J Mattheus	2355844
EPA 353.2 Rev. 2.0	09/13/2022			09/15/2022 14:44	Judith K. Clark	2355844
EPA 365.1 Rev. 2.0	09/13/2022	09/15/2022 15:47	Adam P Silver	09/15/2022 20:30	James L Waggerby	2355844
EPA 365.1 Rev. 2.0 dissolved	09/13/2022			09/13/2022 15:46	Elise M. Gillis	2355845
SM 2320 B-2011	09/13/2022			09/17/2022 07:35	Dale L. Simmons	2355843
SM 2540 C-2011	09/13/2022			09/14/2022 15:45	Yijie Li	2355843
SM 2540 D-2011	09/13/2022			09/14/2022 15:45	Yijie Li	2355843
SM 4500-F- C-2011	09/13/2022			09/17/2022 07:27	Dale L. Simmons	2355843
SM 5310 B-2011	09/13/2022			09/16/2022 06:45	Khloe J Berg	2355844