

Chemical Analysis Report

SW-DIST-2023-09-13-01

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

Event Description: **Tiny Ditch and Trib Howard Prairie**
Request ID: **RQ-2023-09-11-69**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Colin Wright, Program Administrator

Date Certified: 29-SEP-2023 14:04

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

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: Howard Prairie Branch at Grange Hall

Collection Date/Time: 09/12/2023 10:25

Field ID: G2SW0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436489	DEP SOP: NU-094-1	Color (true)	270		PCU	P434943	
	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P435111	
		Sulfate	26		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	102		mg CaCO3/L	P435266	
	SM 2540 C-2015	TDS	227		mg/L	P435389	
	SM 2540 D-2015	TSS	3	I	mg/L	P435298	
	SM 4500-F- C-2011	Fluoride	0.63		mg F/L	P435271	RPD
2436490	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P435135	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P435487	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P435282	
	EPA 365.1 Rev. 2.0	Total-P	0.44		mg P/L	P435035	
	SM 5310 B-2011	Organic Carbon	36		mg C/L	P435437	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 316 umhos/cm.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P434943

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434940

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435135

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435487

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435282

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435035

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

Reference Method: SM 2320 B-2011
Batch ID: P435266

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P435389

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435298

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435271

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435437

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: P434943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434940

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435135

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435282

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435035

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

Reference Method: SM 2320 B-2011
Batch ID: P435266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.6		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P435389

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

Reference Method: SM 2540 D-2015
Batch ID: P435298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	103		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P435271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435437

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436448	Chloride	104		P	90 - 110
2436595	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436448	Sulfate	101		P	90 - 110
2436595	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436388	Ammonia-N	96.6	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436449	Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436434	NO2NO3-N	90.4	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436449	Total-P	108	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P435271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436938	Fluoride	99.0	96.8	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435437

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436026	Organic Carbon	98.0	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436416	Color (true)	4.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436306	Turbidity	0.778	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436448	Chloride	0.190	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436448	Sulfate	0.732	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436388	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436449	Kjeldahl Nitrogen	5.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436434	NO2NO3-N	5.74	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436449	Total-P	1.27	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P435266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436938	Total Alkalinity	0.789	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P435389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436430	TDS	7.67	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436938	Fluoride	1.97	Spike	F	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436026	Organic Carbon	1.67	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: A121509
Included Lab Sample IDs: 2436489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.0	97.0	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1
Run ID: A121511
Included Lab Sample IDs: 2436489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A121585
Included Lab Sample IDs: 2436489

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A121598
Included Lab Sample IDs: 2436490

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A121611
Included Lab Sample IDs: 2436490

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	102	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A121658
Included Lab Sample IDs: 2436489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	93.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A121658
Included Lab Sample IDs: 2436489

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: A121662
Included Lab Sample IDs: 2436490

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A121744

Included Lab Sample IDs: 2436490

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121802

Included Lab Sample IDs: 2436490

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	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		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	99.6			4.48	
EPA 180.1 Rev. 2.0	Turbidity	101			0.778	
EPA 300.0 Rev. 2.1	Chloride	104	104	105	0.190	
	Sulfate	102	101	102	0.732	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	96.6	98.6		1.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	100	106		5.04
EPA 353.2 Rev. 2.0	NO2NO3-N	104	90.4	95.9		5.74
EPA 365.1 Rev. 2.0	Total-P	107	108	107		1.27
SM 2320 B-2011	Total Alkalinity	96.6			0.789	
SM 2540 C-2015	TDS	103			7.67	
SM 2540 D-2015	TSS	103				
SM 4500-F- C-2011	Fluoride	98.3	99.0	96.8		1.97
SM 5310 B-2011	Organic Carbon	96.1	98.0	99.6		1.67

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2436489
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2436489
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2436489
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2436489
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2436490
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2436490
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2436490
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2436490
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2436489
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2436489
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2436489
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2436489
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2436490

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	09/13/2023			09/13/2023 16:47	Alexis Price	2436489
EPA 180.1 Rev. 2.0	09/13/2023			09/13/2023 14:27	Alexis Price	2436489
EPA 300.0 Rev. 2.1	09/13/2023			09/16/2023 10:08	James L Waggerby	2436489
EPA 350.1 Rev. 2.0	09/13/2023			09/18/2023 12:50	Khloe J Berg	2436490
EPA 351.2 Rev. 2.0	09/13/2023	09/26/2023 11:48	Simonne.V. Calhoun	09/27/2023 16:51	Samantha L Bates	2436490
EPA 353.2 Rev. 2.0	09/13/2023			09/19/2023 14:25	Anna M. Plaviak	2436490
EPA 365.1 Rev. 2.0	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 09:35	James L Waggerby	2436490
SM 2320 B-2011	09/13/2023			09/20/2023 05:12	Adam P Silver	2436489
SM 2540 C-2015	09/13/2023			09/15/2023 16:01	Yijie Li	2436489
SM 2540 D-2015	09/13/2023			09/15/2023 16:01	Yijie Li	2436489
SM 4500-F- C-2011	09/13/2023			09/20/2023 05:12	Adam P Silver	2436489
SM 5310 B-2011	09/13/2023			09/23/2023 00:44	Elise M. Gillis	2436490