

Chemical Analysis Report

NE-DIST-2020-11-06-02

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

Event Description: **Pellicer Creek Tribs**
Request ID: **RQ-2020-09-14-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 01-DEC-2020 15:52

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: Pellicer Creek Downstream of Rr Tracks

Collection Date/Time: 11/05/2020 10:10

Field ID: G5NE0590

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2207013	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P389883	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P390002	
		Sulfate	4.0		mg SO4/L	P390004	
	SM 2120 B-2011	Color (true)	530		PCU	P389878	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P389994	
	SM 2540 C-2011	TDS	177		mg/L	P390170	
	SM 2540 D-2011	TSS	3	I	mg/L	P390147	
	SM 4500 F-C-2011	Fluoride	0.060	I	mg F/L	P389995	
2207014	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P389900	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P390012	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P389915	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P389935	
	SM 5310 B-2011	Organic Carbon	44		mg C/L	P390046	
2207015	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P389888	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P389883

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390002

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390004

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389900

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390012

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389935

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389888

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

Reference Method: SM 2120 B-2011
Batch ID: P389878

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P389994

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

Reference Method: SM 2540 C-2011
Batch ID: P390170

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P390147

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P389995

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P390046

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390002

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390012

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389935

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389888

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

Reference Method: SM 2120 B-2011
Batch ID: P389878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P389994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P389995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P390046

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2206977	Chloride	98.9		P	90 - 110
2207145	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2206977	Sulfate	98.3		P	90 - 110
2207145	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207126	Ammonia-N	93.3	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207260	Kjeldahl Nitrogen	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207023	NO2NO3-N	95.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207124	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P389995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207003	Fluoride	99.5	99.5	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P390046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2206978	Organic Carbon	102	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P389883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206977	Turbidity	1.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206977	Chloride	0.887	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206977	Sulfate	0.575	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207126	Ammonia-N	7.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207260	Kjeldahl Nitrogen	0.761	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207023	NO2NO3-N	1.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207004	Total-P	0.669	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207124	O-Phosphate-P	0.494	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
 Batch ID: P389878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207003	Color (true)	0.726	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P389994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207003	Total Alkalinity	0.553	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P390170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206981	TDS	4.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P389995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207003	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P390046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206978	Organic Carbon	1.87	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A102020

Included Lab Sample IDs: 2207013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	99.7	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102023

Included Lab Sample IDs: 2207013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102024

Included Lab Sample IDs: 2207015

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102031

Included Lab Sample IDs: 2207014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	91.0	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102043

Included Lab Sample IDs: 2207014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102065

Included Lab Sample IDs: 2207013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	99.7	P/P	90 - 110
Sulfate	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102070

Included Lab Sample IDs: 2207014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A102094

Included Lab Sample IDs: 2207013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A102094

Included Lab Sample IDs: 2207013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A102121

Included Lab Sample IDs: 2207014

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102130

Included Lab Sample IDs: 2207014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	104	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					1.96	
EPA 300.0 Rev. 2.1	Chloride	99.4	98.9	98.1		0.887	
	Sulfate	99.8	98.3	98.4		0.575	
EPA 350.1 Rev. 2.0	Ammonia-N	94.7	93.3	103			7.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	108	107			0.761
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	95.5	98.0			1.31
EPA 365.1 Rev. 2.0	Total-P	102					0.669
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	101	102			0.494
SM 2120 B-2011	Color (true)	103				0.726	
SM 2320 B-2011	Total Alkalinity	102				0.553	
SM 2540 C-2011	TDS					4.95	
SM 4500 F-C-2011	Fluoride	99.5	99.5	99.5			0.0
SM 5310 B-2011	Organic Carbon	102	102	105			1.87

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2207013
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2207013
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2207013
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2207014
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2207014
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2207014
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2207014
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2207015
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2207013
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2207013
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2207013
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2207013
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2207013
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2207014

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	11/06/2020			11/06/2020 15:46	Yen Ta	2207013
EPA 300.0 Rev. 2.1	11/06/2020			11/10/2020 23:05	Lipi Saha	2207013
EPA 350.1 Rev. 2.0	11/06/2020			11/08/2020 13:02	Ping Hua	2207014
EPA 351.2 Rev. 2.0	11/06/2020	11/12/2020 12:15	David Boose	11/13/2020 11:46	Elliott Rodriguez	2207014
EPA 353.2 Rev. 2.0	11/06/2020			11/09/2020 09:02	Beverly Y. Sanders	2207014
EPA 365.1 Rev. 2.0	11/06/2020	11/09/2020 12:24	Yen Ta	11/10/2020 13:09	Benjamin T. Nordmann	2207014
EPA 365.1 Rev. 2.0 dissolved	11/06/2020			11/06/2020 17:08	Ping Hua	2207015
SM 2120 B-2011	11/06/2020			11/06/2020 16:01	Benjamin T. Nordmann	2207013
SM 2320 B-2011	11/06/2020			11/09/2020 17:41	Dale L. Simmons	2207013
SM 2540 C-2011	11/06/2020			11/09/2020 13:51	Yijie Li	2207013
SM 2540 D-2011	11/06/2020			11/09/2020 13:51	Yijie Li	2207013
SM 4500 F-C-2011	11/06/2020			11/09/2020 17:41	Dale L. Simmons	2207013
SM 5310 B-2011	11/06/2020			11/12/2020 18:02	Touraj Touran	2207014