Chemical Analysis Report

TLH-ROC-2022-08-30-02

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

Event Description: **June-Aug. North Run**
Request ID: **RQ-2022-08-15-32**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Certified by: Colin Wright, Program Administrator

Date Certified: 20-SEP-2022 10:55

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: Parker Creek @ Park **Collection Date/Time: 08/30/2022 11:20**

Field ID: G3TLHR0040 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2353150	DEP SOP: NU-094-1	Color (true)	120		PCU	P418967	
	EPA 180.1 Rev. 2.0	Turbidity	23		NTU	P418945	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P419469	
		Sulfate	4.4		mg SO4/L	P419742	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P419034	
	SM 2540 C-2011	TDS	83		mg/L	P419427	
	SM 2540 D-2011	TSS	33		mg/L	P419317	
	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P419622	
2353151	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P419144	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P418962	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P419212	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P419037	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P419185	

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: P418967

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418945

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419469

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419742

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419144

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418962

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419212

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419037

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

Reference Method: SM 2320 B-2011
Batch ID: P419034

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P419427

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419317

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419622

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419185

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: P418967

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: P418945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419469

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419144

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419212

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: P419037

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

Reference Method: SM 2320 B-2011
Batch ID: P419034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P419622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419185

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 300.0 Rev. 2.1
Batch ID: P419469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353292	Chloride	98.8		P	90 - 110
2353293	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353690	Sulfate	95.1		P	90 - 110
2354011	Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353616	Ammonia-N	98.2	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353106	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353169	Total-P	95.4	99.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P419622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355112	Fluoride	99.7	98.5	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353034	Organic Carbon	89.1	93.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P418967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353168	Color (true)	5.40	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353117	Turbidity	2.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353292	Chloride	0.130	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353690	Sulfate	0.105	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353616	Ammonia-N	0.347	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352954	Kjeldahl Nitrogen	2.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353106	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353169	Total-P	2.14	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P419034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353215	Total Alkalinity	1.95	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P419427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352991	TDS	7.74	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P419622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355112	Fluoride	0.953	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353034	Organic Carbon	3.09	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: A114462
Included Lab Sample IDs: 2353150

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

Reference Method: DEP SOP: NU-094-1
Run ID: A114473
Included Lab Sample IDs: 2353150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A114506
Included Lab Sample IDs: 2353150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A114544
Included Lab Sample IDs: 2353151

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A114549
Included Lab Sample IDs: 2353151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A114561
Included Lab Sample IDs: 2353151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	97.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A114570
Included Lab Sample IDs: 2353151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A114574
Included Lab Sample IDs: 2353151

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114600
Included Lab Sample IDs: 2353150

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

Reference Method: SM 4500-F- C-2011
Run ID: A114739
Included Lab Sample IDs: 2353150

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114789
Included Lab Sample IDs: 2353150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	100	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		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	101				5.40	
EPA 180.1 Rev. 2.0	Turbidity	96.3				2.13	
EPA 300.0 Rev. 2.1	Chloride	100	98.8	99.2		0.130	
	Sulfate	98.2	95.1	97.6		0.105	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	98.2	98.8			0.347
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5					2.67
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	105			0.477
EPA 365.1 Rev. 2.0	Total-P	104	95.4	99.1			2.14
SM 2320 B-2011	Total Alkalinity	104				1.95	
SM 2540 C-2011	TDS					7.74	
SM 4500-F- C-2011	Fluoride	99.6	99.7	98.5			0.953
SM 5310 B-2011	Organic Carbon	95.6	89.1	93.6			3.09

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2353150
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2353150
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2353150
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2353150
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2353151
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2353151
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2353151
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2353151
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2353150
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2353150
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2353150
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2353150
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2353151

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	08/30/2022			08/31/2022 15:45	Blanca Fach	2353150
EPA 180.1 Rev. 2.0	08/30/2022			08/31/2022 13:14	Chandler E Cox	2353150
EPA 300.0 Rev. 2.1	08/30/2022			09/10/2022 01:26	Anna M. Plaviak	2353150
	08/30/2022			09/14/2022 19:23	Anna M. Plaviak	2353150
EPA 350.1 Rev. 2.0	08/30/2022			09/06/2022 12:35	Ping Hua	2353151
EPA 351.2 Rev. 2.0	08/30/2022	09/02/2022 08:53	Samantha L Bates	09/06/2022 14:40	Samantha L Bates	2353151
EPA 353.2 Rev. 2.0	08/30/2022			09/07/2022 10:39	Beverly Y. Sanders	2353151
EPA 365.1 Rev. 2.0	08/30/2022	09/02/2022 10:28	Simonne.V. Calhoun	09/06/2022 10:22	James L Waggerby	2353151
SM 2320 B-2011	08/30/2022			09/02/2022 01:18	Dale L. Simmons	2353150
SM 2540 C-2011	08/30/2022			09/02/2022 16:08	Yijie Li	2353150
SM 2540 D-2011	08/30/2022			09/02/2022 16:08	Yijie Li	2353150
SM 4500-F- C-2011	08/30/2022			09/15/2022 02:25	Dale L. Simmons	2353150
SM 5310 B-2011	08/30/2022			09/06/2022 22:27	Khloe J Berg	2353151