

Chemical Analysis Report

TLH-ROC-2021-06-24-01

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

Event Description: **Run 4a**
Request ID: **RQ-2021-06-14-48**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Date Certified: 19-JUL-2021 09:58



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: CHERRYLK

Collection Date/Time: 06/24/2021 12:00

Field ID: G1TLHR0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257088	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P400182	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P400553	
		Sulfate	0.89		mg SO4/L	P400558	
	SM 2120 B-2011	Color (true)	9.6		PCU	P400184	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P400616	
	SM 2540 C-2011	TDS	37		mg/L	P400605	
	SM 2540 D-2011	TSS	5	I	mg/L	P400608	
	SM 4500 F-C-2011	Fluoride	0.055	I	mg F/L	P400620	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P400738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P400685	
2257089	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400264	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P400339	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P400534	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P400190	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: EPA 180.1 Rev. 2.0
Batch ID: P400182

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400738

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400685

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400264

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400339

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

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

Reference Method: SM 2120 B-2011
Batch ID: P400184

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P400616

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

Reference Method: SM 2540 C-2011
Batch ID: P400605

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400608

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P400534

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: P400553

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P400558

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P400738

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P400685

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P400264

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: P400339

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P400190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.3		P	90 - 110

Reference Method: SM 2120 B-2011
 Batch ID: P400184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
 Batch ID: P400616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256981	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256981	Sulfate	100		P	90 - 110
2257258	Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257123	Ammonia-N	95.0	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257089	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257124	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257027	O-Phosphate-P	94.2	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256854	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P400534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257170	Organic Carbon	96.2	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P400182

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257088	Turbidity	1.32	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P400553

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257258	Chloride	0.503	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P400558

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257258	Sulfate	1.23	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P400738

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257123	Ammonia-N	0.613	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P400685

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257125	Kjeldahl Nitrogen	0.515	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P400264

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257089	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400339

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257124	Total-P	0.967	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400190

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257027	O-Phosphate-P	1.16	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P400184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257020	Color (true)	1.72	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P400616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256854	Total Alkalinity	3.03	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P400605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257022	TDS	3.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256854	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P400534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257170	Organic Carbon	1.46	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: A106265

Included Lab Sample IDs: 2257088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	99.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A106266

Included Lab Sample IDs: 2257088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106267

Included Lab Sample IDs: 2257090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106314

Included Lab Sample IDs: 2257089

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106370

Included Lab Sample IDs: 2257089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106423

Included Lab Sample IDs: 2257088

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

Reference Method: SM 5310 B-2011

Run ID: A106432

Included Lab Sample IDs: 2257089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106477

Included Lab Sample IDs: 2257088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A106477

Included Lab Sample IDs: 2257088

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106531

Included Lab Sample IDs: 2257089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106539

Included Lab Sample IDs: 2257089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.4	100	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
EPA 180.1 Rev. 2.0	Turbidity				1.32	
EPA 300.0 Rev. 2.1	Chloride	103	101		0.503	
	Sulfate	102	94.2 100		1.23	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	95.0 95.8			0.613
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104				0.515
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	100 99.5			1.00
EPA 365.1 Rev. 2.0	Total-P	105	104 103			0.967
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	94.2 95.3			1.16
SM 2120 B-2011	Color (true)	101			1.72	
SM 2320 B-2011	Total Alkalinity	102			3.03	
SM 2540 C-2011	TDS				3.95	
SM 4500 F-C-2011	Fluoride	98.5	101 101			0.0
SM 5310 B-2011	Organic Carbon	95.3	96.2 98.6			1.46

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2257088
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2257088
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2257088
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2257089
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2257089
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2257089
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2257089
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2257090
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2257088
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2257088
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2257088
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2257088
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2257088
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2257089

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	06/24/2021			06/24/2021 15:19	Sarah A Nixon	2257088
EPA 300.0 Rev. 2.1	06/24/2021			07/03/2021 04:16	Lipi Saha	2257088
EPA 350.1 Rev. 2.0	06/24/2021			07/09/2021 11:21	Roberta Tatti	2257089
EPA 351.2 Rev. 2.0	06/24/2021	07/08/2021 15:33	Madeline Gruver	07/09/2021 15:20	Letuzia M De Oliveira	2257089
EPA 353.2 Rev. 2.0	06/24/2021			06/28/2021 09:21	Beverly Y. Sanders	2257089
EPA 365.1 Rev. 2.0	06/24/2021	06/29/2021 13:16	Madeline Gruver	06/30/2021 13:15	Shengyu Ding	2257089
EPA 365.1 Rev. 2.0 dissolved	06/24/2021			06/24/2021 16:12	Ping Hua	2257090
SM 2120 B-2011	06/24/2021			06/24/2021 16:06	Benjamin T. Nordmann	2257088
SM 2320 B-2011	06/24/2021			07/07/2021 02:39	Patrick M. Roche	2257088
SM 2540 C-2011	06/24/2021			06/28/2021 14:25	Yijie Li	2257088
SM 2540 D-2011	06/24/2021			06/28/2021 14:25	Yijie Li	2257088
SM 4500 F-C-2011	06/24/2021			07/07/2021 02:39	Patrick M. Roche	2257088
SM 5310 B-2011	06/24/2021			07/01/2021 13:44	Madeline Gruver	2257089