Chemical Analysis Report

TLH-ROC-2020-09-28-02

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

Event Description: **Run 8a**
Request ID: **RQ-2020-09-21-46**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Tallahassee, FL 32399
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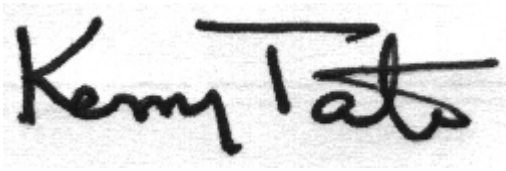
Date Certified: 15-OCT-2020 11:21



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: Watson Bayou South **Collection Date/Time: 09/28/2020 11:00**

Field ID: G3TLHR0006 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2198660	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P387975	
	EPA 300.0 Rev. 2.1	Chloride	4.2E+03		mg Cl/L	P388094	
		Sulfate	590		mg SO4/L	P388097	
	SM 2120 B-2011	Color (true)	100		PCU	P387991	
	SM 2320 B-2011	Total Alkalinity	52		mg CaCO3/L	P388088	
	SM 2540 C-2011	TDS	6.95E+03		mg/L	P388477	
	SM 2540 D-2011	TSS	2	I	mg/L	P388466	
	SM 4500 F-C-2011	Fluoride	0.33		mg F/L	P388091	
2198661	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P388177	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P388104	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388264	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P388275	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P388074	
2198662	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P387986	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387975

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388094

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388097

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388177

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387986

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

Reference Method: SM 2120 B-2011
Batch ID: P387991

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P388088

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

Reference Method: SM 2540 C-2011
Batch ID: P388477

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388466

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388074

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: P388094

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388177

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

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: P388275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387986

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

Reference Method: SM 2120 B-2011
Batch ID: P387991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	94.1		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P388088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	93 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198252	Chloride	105		P	90 - 110
2198715	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198252	Sulfate	101		P	90 - 110
2198715	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198661	Ammonia-N	96.9	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198140	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198661	NO2NO3-N	96.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198140	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198662	O-Phosphate-P	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198158	Fluoride	102	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198677	Organic Carbon	99.4	101	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198772	Turbidity	2.01	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198252	Chloride	0.506	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198252	Sulfate	0.659	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198661	Ammonia-N	0.319	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198140	Kjeldahl Nitrogen	2.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198661	NO2NO3-N	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198140	Total-P	0.973	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198662	O-Phosphate-P	1.27	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B-2011
Batch ID: P387991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198675	Color (true)	0.629	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P388088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198158	Total Alkalinity	0.222	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P388477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198715	TDS	4.44	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198158	Fluoride	0.473	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198677	Organic Carbon	1.02	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: A101259
Included Lab Sample IDs: 2198660

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: A101263
Included Lab Sample IDs: 2198662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.7	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A101265
Included Lab Sample IDs: 2198660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.7	96.0	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A101281
Included Lab Sample IDs: 2198660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	107	107	P/P	90 - 110
Sulfate	105	106	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A101299
Included Lab Sample IDs: 2198661

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

Reference Method: SM 2320 B-2011
Run ID: A101307
Included Lab Sample IDs: 2198660

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

Reference Method: SM 4500 F-C-2011
Run ID: A101307
Included Lab Sample IDs: 2198660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A101338
Included Lab Sample IDs: 2198661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	99.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A101343
Included Lab Sample IDs: 2198661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	93.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A101378
Included Lab Sample IDs: 2198661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101428
Included Lab Sample IDs: 2198661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	96.5	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
EPA 180.1 Rev. 2.0	Turbidity					2.01	
EPA 300.0 Rev. 2.1	Chloride	104	105	107		0.506	
	Sulfate	101	101	100		0.659	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	96.9	97.2			0.319
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	102	105			2.33
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.0	96.5			0.519
EPA 365.1 Rev. 2.0	Total-P	103	105	104			0.973
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	103	102			1.27
SM 2120 B-2011	Color (true)	94.1				0.629	
SM 2320 B-2011	Total Alkalinity	99.7				0.222	
SM 2540 C-2011	TDS					4.44	
SM 4500 F-C-2011	Fluoride	97.8	102	102			0.473
SM 5310 B-2011	Organic Carbon	98.8	99.4	101			1.02

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2198660
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2198660
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2198660
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2198661
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2198661
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2198661
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2198661
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2198662
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2198660
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2198660
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2198660
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2198660
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2198660
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2198661

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	09/28/2020			09/29/2020 15:34	Yen Ta	2198660
EPA 300.0 Rev. 2.1	09/28/2020			10/01/2020 02:36	Lipi Saha	2198660
EPA 350.1 Rev. 2.0	09/28/2020			10/03/2020 16:01	Ping Hua	2198661
EPA 351.2 Rev. 2.0	09/28/2020	10/01/2020 13:30	David Boose	10/02/2020 12:28	Elliott Rodriguez	2198661
EPA 353.2 Rev. 2.0	09/28/2020			10/06/2020 08:49	Beverly Y. Sanders	2198661
EPA 365.1 Rev. 2.0	09/28/2020	10/06/2020 12:50	Yen Ta	10/08/2020 11:44	Lipi Saha	2198661
EPA 365.1 Rev. 2.0 dissolved	09/28/2020			09/29/2020 15:46	Virginia P. Brown	2198662
SM 2120 B-2011	09/28/2020			09/29/2020 16:30	Benjamin T. Nordmann	2198660
SM 2320 B-2011	09/28/2020			10/01/2020 05:15	Dale L. Simmons	2198660
SM 2540 C-2011	09/28/2020			10/01/2020 15:15	Yijie Li	2198660
SM 2540 D-2011	09/28/2020			10/01/2020 15:15	Yijie Li	2198660
SM 4500 F-C-2011	09/28/2020			10/01/2020 03:34	Dale L. Simmons	2198660
SM 5310 B-2011	09/28/2020			09/30/2020 21:01	Madeline Gruver	2198661