Chemical Analysis Report

SW-DIST-2019-10-17-02

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

Event Description: **Simm Branch**
Request ID: **RQ-2019-10-07-63**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 07-NOV-2019 11:32

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: Sims Branch @ Port Redwing **Collection Date/Time: 10/16/2019 10:00**

Field ID: G1SW0056 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2129050	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P372677	
	EPA 300.0	Bromide	45		mg Br/L	P373398	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P372890	
	SM 2540 D-97	TSS	5	I	mg/L	P373261	
	SM 4500 F-C-97	Fluoride	0.99		mg F/L	P372895	
2129051	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P372983	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P372930	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P373013	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P373345	
	SM 5310 B-00	Organic Carbon	5.4		mg C/L	P372970	
2129052	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P372700	

Ref. Method and Comment:
SM 2540 D-97: 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: P372677

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P373398

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372983

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372930

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373013

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373345

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372700

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

Reference Method: SM 2320 B-97
Batch ID: P372890

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

Reference Method: SM 2540 D-97
Batch ID: P373261

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P372895

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372970

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P373398

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372983

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372930

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373013

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: P373345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372700

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

Reference Method: SM 2320 B-97
Batch ID: P372890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P373398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129316	Bromide	92.2	93.5	P/P	90 - 110
2129766	Bromide	92.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128446	Ammonia-N	103	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129051	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128876	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128858	Total-P	95.2	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2129154	O-Phosphate-P	97.9	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P372895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126334	Fluoride	95.9	95.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128534	Organic Carbon	91.8	89.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129039	Turbidity	0.234	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P373398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129316	Bromide	1.21	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128446	Ammonia-N	2.79	Spike	P	0 - 15

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129051	Kjeldahl Nitrogen	0.728	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128876	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128858	Total-P	0.721	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129154	O-Phosphate-P	0.378	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P372890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2129379	Total Alkalinity	1.03	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P372895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126334	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P372970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128534	Organic Carbon	2.51	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: A95040
Included Lab Sample IDs: 2129050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A95048
Included Lab Sample IDs: 2129052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A95133
Included Lab Sample IDs: 2129050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A95133
Included Lab Sample IDs: 2129050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A95164
Included Lab Sample IDs: 2129051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A95172
Included Lab Sample IDs: 2129051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A95178
Included Lab Sample IDs: 2129051

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A95188
Included Lab Sample IDs: 2129051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0
Run ID: A95332
Included Lab Sample IDs: 2129050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95336
Included Lab Sample IDs: 2129051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.234	
EPA 300.0	Bromide	94.4	92.2	93.5	92.0			1.21
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	103	106				2.79
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	103	103				0.728
EPA 353.2 Rev. 2.0	NO2NO3-N	104	108	108				0.0
EPA 365.1 Rev. 2.0	Total-P	99.7	95.2	95.9				0.721
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	97.9	97.4				0.378
SM 2320 B-97	Total Alkalinity	104					1.03	
SM 4500 F-C-97	Fluoride	96.8	95.9	95.9				0.0
SM 5310 B-00	Organic Carbon	92.8	91.8	89.2				2.51

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2129050
EPA 300.0 / E31780	Bromide in aqueous matrices	2129050
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2129051
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2129051
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2129051
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2129051
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2129052
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2129050
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2129050
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2129050
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2129051

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	10/17/2019			10/17/2019 15:48	Samantha Davila	2129050
EPA 300.0	10/17/2019			10/29/2019 19:30	Julia Storbeck	2129050
EPA 350.1 Rev. 2.0	10/17/2019			10/22/2019 12:51	Ping Hua	2129051
EPA 351.2 Rev. 2.0	10/17/2019	10/22/2019 17:35	Jhamieka S. Greenwood	10/23/2019 15:33	Jhamieka S. Greenwood	2129051
EPA 353.2 Rev. 2.0	10/17/2019			10/23/2019 12:50	Beverly Y. Sanders	2129051
EPA 365.1 Rev. 2.0	10/17/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 10:22	Lipi Saha	2129051
EPA 365.1 Rev. 2.0 dissolved	10/17/2019			10/17/2019 15:05	Virginia P. Brown	2129052
SM 2320 B-97	10/17/2019			10/22/2019 03:59	Dale L. Simmons	2129050
SM 2540 D-97	10/17/2019			10/18/2019 15:45	Yijie Li	2129050
SM 4500 F-C-97	10/17/2019			10/22/2019 01:16	Dale L. Simmons	2129050
SM 5310 B-00	10/17/2019			10/22/2019 14:08	Madeline Funaro	2129051