

Chemical Analysis Report

NW-DIST-2020-11-25-01

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

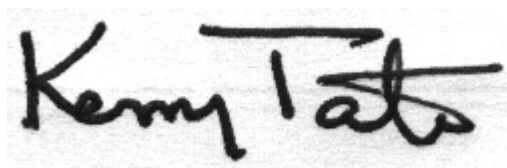
Event Description: **Alaqua Continuous Monitoring**
Request ID: **RQ-2020-11-23-36**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-DEC-2020 10:41

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Alaqua Creek below Portland Park

Collection Date/Time: 11/24/2020 13:36

Field ID: G3NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2209372	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P390475	
	EPA 300.0 Rev. 2.1	Bromide	5.2		mg Br/L	P390683	
	SM 2320 B-2011	Total Alkalinity	10		mg CaCO3/L	P390500	
	SM 2540 D-2011	TSS	2	I	mg/L	P390768	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P390503	
2209373	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P390495	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P390657	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P390644	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P390664	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P390552	
2209374	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P390478	

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: P390475

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390683

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390495

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390657

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390644

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390664

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390478

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

Reference Method: SM 2320 B-2011
Batch ID: P390500

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

Reference Method: SM 2540 D-2011
Batch ID: P390768

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P390503

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P390552

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: P390683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P390495

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P390657

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: P390644

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P390664

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: P390478

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

Reference Method: SM 2320 B-2011
 Batch ID: P390500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
 Batch ID: P390503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
 Batch ID: P390552

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: P390683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209372	Bromide	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209373	Ammonia-N	99.7	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209270	Kjeldahl Nitrogen	96.4	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209373	NO2NO3-N	99.2	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209373	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209460	O-Phosphate-P	98.9	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P390503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209071	Fluoride	102	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P390552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2209367	Organic Carbon	105	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209349	Turbidity	1.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209372	Bromide	0.390	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209373	Ammonia-N	0.686	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209270	Kjeldahl Nitrogen	7.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209373	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209373	Total-P	0.214	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209460	O-Phosphate-P	0.632	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P390500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209071	Total Alkalinity	0.683	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P390503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209071	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P390552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2209367	Organic Carbon	1.15	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: A102309

Included Lab Sample IDs: 2209372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	103	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102311

Included Lab Sample IDs: 2209374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102322

Included Lab Sample IDs: 2209373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A102325

Included Lab Sample IDs: 2209372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102325

Included Lab Sample IDs: 2209372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A102346

Included Lab Sample IDs: 2209373

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102389

Included Lab Sample IDs: 2209373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	101	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102411

Included Lab Sample IDs: 2209372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102412

Included Lab Sample IDs: 2209373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102422

Included Lab Sample IDs: 2209373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.8	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					1.40	
EPA 300.0 Rev. 2.1	Bromide	106	102	102			0.390
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	99.7	98.8			0.686
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	96.4	104			7.36
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.2	99.2			0.0
EPA 365.1 Rev. 2.0	Total-P	105	103	104			0.214
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.9	99.6			0.632
SM 2320 B-2011	Total Alkalinity	99.5				0.683	
SM 4500 F-C-2011	Fluoride	100	102	102			0.0
SM 5310 B-2011	Organic Carbon	102	105	104			1.15

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2209372
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2209372
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2209373
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2209373
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2209373
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2209373
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2209374
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2209372
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2209372
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2209372
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2209373

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	11/25/2020			11/25/2020 16:11	Yen Ta	2209372
EPA 300.0 Rev. 2.1	11/25/2020			12/01/2020 18:14	Lipi Saha	2209372
EPA 350.1 Rev. 2.0	11/25/2020			11/29/2020 12:12	Ping Hua	2209373
EPA 351.2 Rev. 2.0	11/25/2020	12/03/2020 16:30	David Boose	12/04/2020 09:08	Elliott Rodriguez	2209373
EPA 353.2 Rev. 2.0	11/25/2020			12/03/2020 09:58	Beverly Y. Sanders	2209373
EPA 365.1 Rev. 2.0	11/25/2020	12/03/2020 13:21	Yen Ta	12/04/2020 14:02	Shengyu Wang	2209373
EPA 365.1 Rev. 2.0 dissolved	11/25/2020			11/25/2020 17:30	Ping Hua	2209374
SM 2320 B-2011	11/25/2020			11/25/2020 23:43	Dale L. Simmons	2209372
SM 2540 D-2011	11/25/2020			11/25/2020 11:25	Yijie Li	2209372
SM 4500 F-C-2011	11/25/2020			11/25/2020 23:43	Dale L. Simmons	2209372
SM 5310 B-2011	11/25/2020			12/01/2020 00:13	Madeline Gruver	2209373