Chemical Analysis Report

NE-DIST-2020-12-23-02

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

Event Description: **Continuous Monitoring Event**
Request ID: **RQ-2020-12-21-38**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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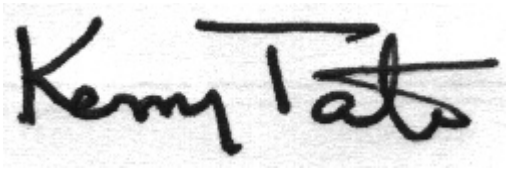
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 14-JAN-2021 11:10



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: Plummer Creek @ Second Island **Collection Date/Time: 12/22/2020 12:20**

Field ID: G4NE0301 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2215562	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P391698	
	EPA 300.0 Rev. 2.1	Bromide	0.63		mg Br/L	P392117	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P391892	
	SM 2540 D-2011	TSS	4	I A	mg/L	P391965	
	SM 4500 F-C-2011	Fluoride	0.067	I	mg F/L	P391894	MS
2215563	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P391739	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P391839	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P391741	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P391757	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P391941	
2215564	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.049		mg P/L	P391700	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries and relative percent difference 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 and relative percent difference are unavailable because of analytical difficulties.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P391698

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392117

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391739

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391839

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391741

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391757

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391700

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

Reference Method: SM 2320 B-2011
Batch ID: P391892

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

Reference Method: SM 2540 D-2011
Batch ID: P391965

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P391894

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P391941

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: P392117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391839

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391757

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391700

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

Reference Method: SM 2320 B-2011
Batch ID: P391892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P391894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391941

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 350.1 Rev. 2.0
Batch ID: P391739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215563	Ammonia-N	97.0	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215674	NO2NO3-N	95.3	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215516	Total-P	100	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215554	O-Phosphate-P	95.7	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P391894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215931	Fluoride	93.0	91.5	F/F	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215897	Organic Carbon	100		P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P391698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215552	Turbidity	2.71	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215563	Ammonia-N	0.400	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215674	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215516	Total-P	0.486	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215554	O-Phosphate-P	0.380	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P391892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215931	Total Alkalinity	2.78	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P391894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215931	Fluoride	1.45	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P391941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215897	Organic Carbon	0.883	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A102767
Included Lab Sample IDs: 2215562

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: A102768
Included Lab Sample IDs: 2215564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A102784
Included Lab Sample IDs: 2215563

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A102788
Included Lab Sample IDs: 2215563

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: A102819
Included Lab Sample IDs: 2215563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	85 - 115

Reference Method: SM 2320 B-2011
Run ID: A102854
Included Lab Sample IDs: 2215562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.3	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A102854
Included Lab Sample IDs: 2215562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.8	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A102855
Included Lab Sample IDs: 2215563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	96.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A102874
Included Lab Sample IDs: 2215563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	95.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A102949
Included Lab Sample IDs: 2215562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	94.4	97.1	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					2.71	
EPA 300.0 Rev. 2.1	Bromide	97.2					
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	97.0	97.6			0.400
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105					
EPA 353.2 Rev. 2.0	NO2NO3-N	101	95.3	95.3			0.0
EPA 365.1 Rev. 2.0	Total-P	102	100	99.7			0.486
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.7	96.2			0.380
SM 2320 B-2011	Total Alkalinity	97.1				2.78	
SM 4500 F-C-2011	Fluoride	95.7	93.0	91.5			1.45
SM 5310 B-2011	Organic Carbon	95.3	100				0.883

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2215562
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2215562
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2215563
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2215563
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2215563
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2215563
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2215564
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2215562
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2215562
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2215562
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2215563

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	12/23/2020			12/23/2020 14:15	Yen Ta	2215562
EPA 300.0 Rev. 2.1	12/23/2020			01/07/2021 16:06	Lipi Saha	2215562
EPA 350.1 Rev. 2.0	12/23/2020			12/27/2020 18:27	Ping Hua	2215563
EPA 351.2 Rev. 2.0	12/23/2020	12/29/2020 10:24	Yen Ta	12/30/2020 17:21	Virginia P. Brown	2215563
EPA 353.2 Rev. 2.0	12/23/2020			12/28/2020 08:48	Beverly Y. Sanders	2215563
EPA 365.1 Rev. 2.0	12/23/2020	12/28/2020 12:53	Yen Ta	12/29/2020 17:19	Benjamin T. Nordmann	2215563
EPA 365.1 Rev. 2.0 dissolved	12/23/2020			12/23/2020 16:21	Virginia P. Brown	2215564
SM 2320 B-2011	12/23/2020			12/30/2020 18:12	Dale L. Simmons	2215562
SM 2540 D-2011	12/23/2020			12/28/2020 11:55	Yijie Li	2215562
SM 4500 F-C-2011	12/23/2020			12/30/2020 18:12	Dale L. Simmons	2215562
SM 5310 B-2011	12/23/2020			01/04/2021 09:20	Touraj Touran	2215563