

Chemical Analysis Report

NE-DIST-2020-07-15-02

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

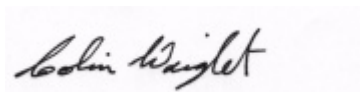
Event Description: **Continuous Monitoring Event**
Request ID: **RQ-2020-05-25-22**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
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Attn: Brian G Davis

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Certified by: Colin Wright, Program Administrator

Date Certified: 06-AUG-2020 08:45

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: 07/14/2020 10:55

Field ID: G4NE0301

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2183177	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P384669	
	EPA 300.0 Rev. 2.1	Bromide	0.12		mg Br/L	P385582	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P384850	
	SM 2540 D-2011	TSS	14		mg/L	P385127	
	SM 4500 F-C-2011	Fluoride	0.072	I	mg F/L	P384855	
2183178	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P384822	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P384774	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P384770	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P384878	
	SM 5310 B-2011	Organic Carbon	44		mg C/L	P384780	
2183179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P384677	

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: P384669

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385582

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384822

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384774

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384770

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384878

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384677

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

Reference Method: SM 2320 B-2011
Batch ID: P384850

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

Reference Method: SM 2540 D-2011
Batch ID: P385127

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P384855

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384780

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: P385582

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384774

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384878

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: P384677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.5		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P384850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P384780

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182961	Bromide	92.9		P	90 - 110
2183177	Bromide	93.3	92.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183161	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183161	Kjeldahl Nitrogen	101	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183154	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183102	Total-P	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183189	O-Phosphate-P	94.8	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P384855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183339	Fluoride	103	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182968	Organic Carbon	99.7	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183076	Turbidity	1.57	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183177	Bromide	0.308	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183161	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183161	Kjeldahl Nitrogen	5.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183154	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183102	Total-P	1.69	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183189	O-Phosphate-P	1.66	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183339	Total Alkalinity	1.20	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P384855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183339	Fluoride	1.87	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182968	Organic Carbon	0.0272	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100250

Included Lab Sample IDs: 2183177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.7	107	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99896

Included Lab Sample IDs: 2183177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99898

Included Lab Sample IDs: 2183179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.6	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99931

Included Lab Sample IDs: 2183178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99938

Included Lab Sample IDs: 2183178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99954

Included Lab Sample IDs: 2183178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99965

Included Lab Sample IDs: 2183177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99965

Included Lab Sample IDs: 2183177

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99971

Included Lab Sample IDs: 2183178

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99998

Included Lab Sample IDs: 2183178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	98.8	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.57	
EPA 300.0 Rev. 2.1	Bromide	96.2	93.3	92.9	92.9		0.308
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	101	100			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	101	107			5.04
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	105	105	108			1.69
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.5	94.8	96.5			1.66
SM 2320 B-2011	Total Alkalinity	99.2				1.20	
SM 4500 F-C-2011	Fluoride	98.9	103	100			1.87
SM 5310 B-2011	Organic Carbon	100	99.7	99.8			0.0272

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2183177
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2183177
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2183178
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2183178
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2183178
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2183178
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2183179
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2183177
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2183177
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2183177
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2183178

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	07/15/2020			07/15/2020 15:03	Yen Ta	2183177
EPA 300.0 Rev. 2.1	07/15/2020			07/28/2020 13:53	Julia Storbeck	2183177
EPA 350.1 Rev. 2.0	07/15/2020			07/18/2020 13:23	Ping Hua	2183178
EPA 351.2 Rev. 2.0	07/15/2020	07/17/2020 11:15	Jhamieka S. Greenwood	07/20/2020 13:20	Jhamieka S. Greenwood	2183178
EPA 353.2 Rev. 2.0	07/15/2020			07/17/2020 09:28	Beverly Y. Sanders	2183178
EPA 365.1 Rev. 2.0	07/15/2020	07/20/2020 13:21	Yen Ta	07/21/2020 10:46	Lipi Saha	2183178
EPA 365.1 Rev. 2.0 dissolved	07/15/2020			07/15/2020 16:26	Jhamieka S. Greenwood	2183179
SM 2320 B-2011	07/15/2020			07/18/2020 13:26	Samantha Davila	2183177
SM 2540 D-2011	07/15/2020			07/20/2020 13:22	Yijie Li	2183177
SM 4500 F-C-2011	07/15/2020			07/18/2020 13:26	Samantha Davila	2183177
SM 5310 B-2011	07/15/2020			07/17/2020 00:08	David Boose	2183178