

Chemical Analysis Report

NE-DIST-2019-12-17-02

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

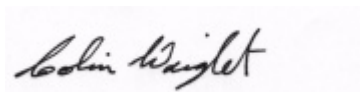
Event Description: **Hopkins make up**
Request ID: **RQ-2019-12-16-53**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-JAN-2020 14:31

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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: Hopkins Creek at Kings Rd

Collection Date/Time: 12/16/2019 12:50

Field ID: 20030758

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144427	EPA 180.1 Rev. 2.0	Turbidity	9.5	A	NTU	P376031	
	EPA 300.0	Bromide	41		mg Br/L	P376612	
	SM 2320 B-97	Total Alkalinity	102		mg CaCO3/L	P376366	
	SM 2540 D-97	TSS	14	A	mg/L	P376499	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P376369	
2144428	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P376349	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P376069	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P376399	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P376082	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P376168	
2144429	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P375995	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376031

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P376612

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376069

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376399

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376082

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375995

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

Reference Method: SM 2320 B-97
Batch ID: P376366

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

Reference Method: SM 2540 D-97
Batch ID: P376499

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P376369

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P376168

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: P376612

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376069

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376399

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: P376082

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375995

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

Reference Method: SM 2320 B-97
Batch ID: P376366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P376369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P376168

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P376612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144584	Bromide	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144413	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144428	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144414	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144395	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144417	O-Phosphate-P	96.1	93.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P376369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144892	Fluoride	94.3	95.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P376168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142709	Organic Carbon	100	99.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144427	Turbidity	4.32	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P376612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144584	Bromide	0.513	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144413	Ammonia-N	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144428	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144414	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144395	Total-P	1.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144417	O-Phosphate-P	2.85	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P376366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144892	Total Alkalinity	0.00436	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P376499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144427	TSS	5.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P376369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144892	Fluoride	0.464	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P376168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142709	Organic Carbon	0.521	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96398

Included Lab Sample IDs: 2144429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96416

Included Lab Sample IDs: 2144427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A96470

Included Lab Sample IDs: 2144428

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96486

Included Lab Sample IDs: 2144428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96498

Included Lab Sample IDs: 2144428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96549

Included Lab Sample IDs: 2144428

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

Reference Method: SM 2320 B-97

Run ID: A96556

Included Lab Sample IDs: 2144427

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

Reference Method: SM 4500 F-C-97

Run ID: A96556

Included Lab Sample IDs: 2144427

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96568

Included Lab Sample IDs: 2144428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A96678

Included Lab Sample IDs: 2144427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	102	103	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					4.32	
EPA 300.0	Bromide	102	101	101			0.513
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	105			1.51
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102	101			1.30
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	104	102	104			1.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.1	93.4			2.85
SM 2320 B-97	Total Alkalinity	103				0.0043	
SM 2540 D-97	TSS					5.71	
SM 4500 F-C-97	Fluoride	99.4	94.3	95.1			0.464
SM 5310 B-00	Organic Carbon	101	100	99.5			0.521

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2144427
EPA 300.0 / E31780	Bromide in aqueous matrices	2144427
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2144428
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2144428
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2144428
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2144428
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2144429
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2144427
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2144427
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2144427
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2144428

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	12/17/2019			12/17/2019 17:24	Blanca Fach	2144427
EPA 300.0	12/17/2019			01/02/2020 21:34	Jhamieka S. Greenwood	2144427
EPA 350.1 Rev. 2.0	12/17/2019			12/23/2019 12:47	Ping Hua	2144428
EPA 351.2 Rev. 2.0	12/17/2019	12/18/2019 11:30	Sima Feizi	12/19/2019 12:52	Jhamieka S. Greenwood	2144428
EPA 353.2 Rev. 2.0	12/17/2019			12/26/2019 10:09	Beverly Y. Sanders	2144428
EPA 365.1 Rev. 2.0	12/17/2019	12/18/2019 14:20	Lipi Saha	12/19/2019 16:03	Benjamin T. Nordmann	2144428
EPA 365.1 Rev. 2.0 dissolved	12/17/2019			12/17/2019 15:48	Samantha Davila	2144429
SM 2320 B-97	12/17/2019			12/21/2019 06:52	Dale L. Simmons	2144427
SM 2540 D-97	12/17/2019			12/19/2019 14:11	Yijie Li	2144427
SM 4500 F-C-97	12/17/2019			12/21/2019 02:25	Dale L. Simmons	2144427
SM 5310 B-00	12/17/2019			12/19/2019 01:57	Madeline Funaro	2144428