

Chemical Analysis Report

NE-DIST-2020-07-30-01

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
Jacksonville, FL 32256
Attn: Brian G Davis

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 24-AUG-2020 13:49

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: Unnamed Drain South Entrance

Collection Date/Time: 07/29/2020 11:05

Field ID: G5NE0591

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187245	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P385423	
	EPA 300.0 Rev. 2.1	Bromide	54		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	128		mg CaCO3/L	P385565	
	SM 2540 D-2011	TSS	50		mg/L	P385704	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P385525	
2187246	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P385484	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P385421	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P385577	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P385518	
2187247	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P385398	

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: P385423

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385421

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385577

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385518

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385398

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

Reference Method: SM 2320 B-2011
Batch ID: P385565

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

Reference Method: SM 2540 D-2011
Batch ID: P385704

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P385525

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385421

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385577

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: P385518

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: P385398

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P385565

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

Reference Method: SM 4500 F-C-2011
Batch ID: P385525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	90 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187681	Bromide	97.9	94.0	P/P	90 - 110
2187682	Bromide	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187320	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186974	Kjeldahl Nitrogen	105	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186972	NO2NO3-N	98.4	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186971	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187321	O-Phosphate-P	99.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P385525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187319	Fluoride	101	101	P/P	94 - 107

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187207	Turbidity	2.60	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187681	Bromide	2.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187320	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186974	Kjeldahl Nitrogen	4.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186972	NO2NO3-N	0.908	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186971	Total-P	1.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187321	O-Phosphate-P	0.999	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187682	Total Alkalinity	2.80	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P385525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187319	Fluoride	0.0	Spike	P	0 - 2.8

* 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: A100188

Included Lab Sample IDs: 2187247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100196

Included Lab Sample IDs: 2187245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100213

Included Lab Sample IDs: 2187246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100227

Included Lab Sample IDs: 2187245

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100234

Included Lab Sample IDs: 2187246

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

Reference Method: SM 2320 B-2011

Run ID: A100241

Included Lab Sample IDs: 2187245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100247

Included Lab Sample IDs: 2187246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100284

Included Lab Sample IDs: 2187246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.9	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100541

Included Lab Sample IDs: 2187245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.0	99.4	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					2.60	
EPA 300.0 Rev. 2.1	Bromide	102	97.9	94.0	95.9		2.42
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	101	102			1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	105	111			4.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	98.4	97.4			0.908
EPA 365.1 Rev. 2.0	Total-P	102	105	103			1.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	99.6	101			0.999
SM 2320 B-2011	Total Alkalinity	104				2.80	
SM 4500 F-C-2011	Fluoride	99.8	101	101			0.0

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2187245
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2187245
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2187246
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2187246
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2187246
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2187246
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2187247
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2187245
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2187245
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2187245

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	07/30/2020			07/30/2020 15:42	Blanca Fach	2187245
EPA 300.0 Rev. 2.1	07/30/2020			08/15/2020 05:15	Julia Storbeck	2187245
EPA 350.1 Rev. 2.0	07/30/2020			08/02/2020 13:15	Ping Hua	2187246
EPA 351.2 Rev. 2.0	07/30/2020	07/31/2020 10:40	Jhamieka S. Greenwood	08/03/2020 16:20	Julia Storbeck	2187246
EPA 353.2 Rev. 2.0	07/30/2020			08/04/2020 08:25	Beverly Y. Sanders	2187246
EPA 365.1 Rev. 2.0	07/30/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 11:17	Benjamin T. Nordmann	2187246
EPA 365.1 Rev. 2.0 dissolved	07/30/2020			07/30/2020 14:59	Jhamieka S. Greenwood	2187247
SM 2320 B-2011	07/30/2020			08/04/2020 05:14	Dale L. Simmons	2187245
SM 2540 D-2011	07/30/2020			07/31/2020 17:30	Madeline Gruver	2187245
SM 4500 F-C-2011	07/30/2020			07/31/2020 22:24	Dale L. Simmons	2187245