

Chemical Analysis Report

SO-DIST-2020-08-06-01

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

Event Description: **2020 SMP : Naples**
Request ID: **RQ-2020-08-03-56**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 27-AUG-2020 17:05



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: 8063 @ Gordon Pass

Collection Date/Time: 08/05/2020 11:00

Field ID: G1SD0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2188982	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P385742	
	EPA 300.0 Rev. 2.1	Bromide	68		mg Br/L	P386267	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P385835	
	SM 2540 D-2011	TSS	3	I	mg/L	P386008	
	SM 4500 F-C-2011	Fluoride	1.3		mg F/L	P385838	
2188983	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P385805	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P385877	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385865	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P385825	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P385885	
2188984	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P385741	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385742

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386267

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385805

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385865

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385825

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385741

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

Reference Method: SM 2320 B-2011
Batch ID: P385835

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

Reference Method: SM 2540 D-2011
Batch ID: P386008

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385885

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: P386267

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

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: P385865

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385825

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385741

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

Reference Method: SM 2320 B-2011
Batch ID: P385835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188924	Bromide	105	104	P/P	90 - 110
2189535	Bromide	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188652	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188652	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188759	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188759	Total-P	99.8	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188761	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188758	Fluoride	100	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188983	Organic Carbon	102	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P385742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188757	Turbidity	0.635	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188924	Bromide	1.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P385805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188652	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P385877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188652	Kjeldahl Nitrogen	0.438	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P385865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188759	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P385825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188759	Total-P	0.959	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P385741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188761	O-Phosphate-P	0.198	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P385835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188758	Total Alkalinity	1.41	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P386008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188651	TSS	7.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188758	Fluoride	0.464	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188983	Organic Carbon	1.24	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: A100321

Included Lab Sample IDs: 2188984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	99.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100322

Included Lab Sample IDs: 2188982

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100352

Included Lab Sample IDs: 2188983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	98.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100371

Included Lab Sample IDs: 2188982

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

Reference Method: SM 4500 F-C-2011

Run ID: A100371

Included Lab Sample IDs: 2188982

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100382

Included Lab Sample IDs: 2188983

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

Reference Method: SM 5310 B-2011

Run ID: A100385

Included Lab Sample IDs: 2188983

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100400

Included Lab Sample IDs: 2188983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100416

Included Lab Sample IDs: 2188983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100541

Included Lab Sample IDs: 2188982

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.6	101	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					0.635	
EPA 300.0 Rev. 2.1	Bromide	106	105	104	101		1.43
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	99.8	101			1.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	102			0.438
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	100	99.8	98.8			0.959
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	101	101			0.198
SM 2320 B-2011	Total Alkalinity	101				1.41	
SM 2540 D-2011	TSS					7.59	
SM 4500 F-C-2011	Fluoride	98.4	100	101			0.464
SM 5310 B-2011	Organic Carbon	103	102	104			1.24

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2188982
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2188982
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2188983
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2188983
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2188983
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2188983
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2188984
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2188982
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2188982
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2188982
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2188983

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	08/06/2020			08/06/2020 16:18	Blanca Fach	2188982
EPA 300.0 Rev. 2.1	08/06/2020			08/15/2020 21:29	Julia Storbeck	2188982
EPA 350.1 Rev. 2.0	08/06/2020			08/08/2020 15:24	Ping Hua	2188983
EPA 351.2 Rev. 2.0	08/06/2020	08/11/2020 09:50	Sima Feizi	08/12/2020 12:28	Jhamieka S. Greenwood	2188983
EPA 353.2 Rev. 2.0	08/06/2020			08/11/2020 09:24	Beverly Y. Sanders	2188983
EPA 365.1 Rev. 2.0	08/06/2020	08/10/2020 11:00	Shengyu Wang	08/12/2020 08:04	Lipi Saha	2188983
EPA 365.1 Rev. 2.0 dissolved	08/06/2020			08/06/2020 16:17	Samantha Davila	2188984
SM 2320 B-2011	08/06/2020			08/08/2020 00:26	Dale L. Simmons	2188982
SM 2540 D-2011	08/06/2020			08/10/2020 13:50	Yijie Li	2188982
SM 4500 F-C-2011	08/06/2020			08/07/2020 23:25	Dale L. Simmons	2188982
SM 5310 B-2011	08/06/2020			08/11/2020 09:31	David Boose	2188983