Chemical Analysis Report

SO-DIST-2023-03-23-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2022 SMP : Charlotte Harbor**
Request ID: **RQ-2023-03-13-21**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 314
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Certified by: Colin Wright, Program Administrator

Date Certified: 14-APR-2023 09:12

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: Tippecanoe Bay North **Collection Date/Time: 03/22/2023 11:10**

Field ID: G3SD0218 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2395950	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P427583	
	SM 2320 B-2011	Total Alkalinity	105		mg CaCO3/L	P427667	
	SM 2540 D-2015	TSS	5	I	mg/L	P427913	
	SM 4500-F- C-2011	Fluoride	0.97		mg F/L	P427669	
2395952	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P427638	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P427970	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P427917	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P427688	
	SM 5310 B-2011	Organic Carbon	9.1		mg C/L	P427830	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Myakka River West **Collection Date/Time: 03/22/2023 10:40**

Field ID: G3SD0219 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2395951	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P427583	
	SM 2320 B-2011	Total Alkalinity	104		mg CaCO3/L	P427667	
	SM 2540 D-2015	TSS	4	I	mg/L	P427913	
	SM 4500-F- C-2011	Fluoride	0.80		mg F/L	P427669	
2395953	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P427638	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P428228	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P427917	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P427688	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P427907	

Ref. Method and Comment:
SM 2540 D-2015: 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: P427583

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427638

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427970

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428228

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427917

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

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

Reference Method: SM 2320 B-2011
Batch ID: P427667

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

Reference Method: SM 2540 D-2015
Batch ID: P427913

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P427669

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P427830

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P427907

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427583

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427970

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P427667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.2		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P427913

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	99.5		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P427669

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	96 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P427830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P427907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395810	Ammonia-N	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395813	Kjeldahl Nitrogen	97.5	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395976	Kjeldahl Nitrogen	110	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395817	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395952	Total-P	95.8	96.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P427669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395975	Fluoride	97.8	98.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395036	Organic Carbon	89.5	90.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P427907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395953	Organic Carbon	92.3	90.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395895	Turbidity	8.14	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395810	Ammonia-N	0.528	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395813	Kjeldahl Nitrogen	0.775	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395976	Kjeldahl Nitrogen	0.960	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395817	NO2NO3-N	0.473	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395952	Total-P	0.579	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P427667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395975	Total Alkalinity	0.610	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P427669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395975	Fluoride	0.480	Spike	P	0 - 1.6

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P427830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395036	Organic Carbon	0.757	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P427907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395953	Organic Carbon	1.31	Spike	P	0 - 20

* 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: A118166
Included Lab Sample IDs: 2395950, 2395951

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118183
Included Lab Sample IDs: 2395952, 2395953

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

Reference Method: SM 2320 B-2011
Run ID: A118194
Included Lab Sample IDs: 2395950, 2395951

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.9	95.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A118194
Included Lab Sample IDs: 2395950, 2395951

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118228
Included Lab Sample IDs: 2395952, 2395953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118274
Included Lab Sample IDs: 2395952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	94.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118311
Included Lab Sample IDs: 2395953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118313
Included Lab Sample IDs: 2395952, 2395953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118398
Included Lab Sample IDs: 2395952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118511
Included Lab Sample IDs: 2395953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	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	100				8.14	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	106	107			0.528
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	97.5	98.3			0.775
	Kjeldahl Nitrogen	108	110	108			0.960
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	106			0.473
EPA 365.1 Rev. 2.0	Total-P	97.8	95.8	96.5			0.579
SM 2320 B-2011	Total Alkalinity	95.2				0.610	
SM 2540 D-2015	TSS	99.5					
SM 4500-F- C-2011	Fluoride	98.6	97.8	98.4			0.480
SM 5310 B-2011	Organic Carbon	98.6	89.5	90.2			0.757
	Organic Carbon	98.5	92.3	90.7			1.31

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2395950, 2395951
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2395952, 2395953
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2395952, 2395953
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2395952, 2395953
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2395952, 2395953
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2395950, 2395951
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2395950, 2395951
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2395950, 2395951
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2395952, 2395953

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	03/23/2023			03/23/2023 13:43	Anna M. Plaviak	2395950
	03/23/2023			03/23/2023 13:44	Anna M. Plaviak	2395951
EPA 350.1 Rev. 2.0	03/23/2023			03/24/2023 12:49	Ping Hua	2395952
	03/23/2023			03/24/2023 12:50	Ping Hua	2395953
EPA 351.2 Rev. 2.0	03/23/2023	04/03/2023 11:24	Simonne.V. Calhoun	04/05/2023 16:12	Samantha L Bates	2395952
	03/23/2023	04/10/2023 12:45	Simonne.V. Calhoun	04/11/2023 16:15	Samantha L Bates	2395953
EPA 353.2 Rev. 2.0	03/23/2023			03/31/2023 09:55	Beverly Y. Sanders	2395952
	03/23/2023			03/31/2023 09:56	Beverly Y. Sanders	2395953
EPA 365.1 Rev. 2.0	03/23/2023	03/27/2023 13:30	Alexis Price	03/28/2023 09:48	James L Waggerby	2395952
	03/23/2023	03/27/2023 13:30	Alexis Price	03/28/2023 09:53	James L Waggerby	2395953
SM 2320 B-2011	03/23/2023			03/25/2023 04:48	Chandler E Cox	2395951
	03/23/2023			03/25/2023 05:02	Chandler E Cox	2395950
SM 2540 D-2015	03/23/2023			03/24/2023 15:34	Yijie Li	2395950, 2395951
SM 4500-F- C-2011	03/23/2023			03/25/2023 03:10	Chandler E Cox	2395951
	03/23/2023			03/25/2023 03:15	Chandler E Cox	2395950
SM 5310 B-2011	03/23/2023			03/29/2023 05:53	Elise M. Gillis	2395952
	03/23/2023			03/31/2023 00:01	Elise M. Gillis	2395953