

Chemical Analysis Report

SO-DIST-2023-04-19-01

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

Event Description: **2023 SMP: Goin' Coastal**
Request ID: **RQ-2023-04-10-33**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 10-MAY-2023 13:29



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: PUNTA RASSA COVE

Collection Date/Time: 04/18/2023 08:45

Field ID: G2SD0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401461	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P428718	
	SM 2320 B-2011	Total Alkalinity	113		mg CaCO3/L	P428869	
	SM 2540 D-2015	TSS	4	I	mg/L	P429186	
	SM 4500-F- C-2011	Fluoride	0.91		mg F/L	P429443	
2401462	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P429010	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P428925	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P429106	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P428832	
	SM 5310 B-2011	Organic Carbon	8.8		mg C/L	P429307	

Ref. Method and Comment:

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

SM 4500-F- C-2011: LFB is unavailable because of analytical difficulties.

Sample Location: HENDRY CREEK LOWER SITE

Collection Date/Time: 04/18/2023 10:15

Field ID: G1SD0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401459	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P428718	
	SM 2320 B-2011	Total Alkalinity	176		mg CaCO3/L	P428869	
	SM 2540 D-2015	TSS	5	I	mg/L	P429186	
	SM 4500-F- C-2011	Fluoride	0.97		mg F/L	P429443	
2401460	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P429010	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P428925	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P429106	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P428832	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P428911	

Ref. Method and Comment:

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

SM 4500-F- C-2011: LFB is unavailable because of analytical difficulties.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428718

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429010

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428925

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429106

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428832

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

Reference Method: SM 2320 B-2011
Batch ID: P428869

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

Reference Method: SM 2540 D-2015
Batch ID: P429186

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429443

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P428911

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P429307

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: P428718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428925

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429106

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: P428832

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

Reference Method: SM 2320 B-2011
Batch ID: P428869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.5		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P429186

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 106

Reference Method: SM 5310 B-2011
Batch ID: P428911

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.3		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P429307

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401462	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401462	Kjeldahl Nitrogen	98.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401328	NO2NO3-N	97.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401462	Total-P	95.6	96.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P429443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2400123	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P428911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2400913	Organic Carbon	90.1	90.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P429307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401935	Organic Carbon	95.9	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401406	Turbidity	0.564	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401462	Ammonia-N	0.159	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401462	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401328	NO2NO3-N	1.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401462	Total-P	0.753	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P428869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401465	Total Alkalinity	1.23	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P429443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2400123	Fluoride	0.483	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P428911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2400913	Organic Carbon	0.0984	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P429307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401935	Organic Carbon	0.0809	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: A118666

Included Lab Sample IDs: 2401459, 2401461

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

Reference Method: SM 2320 B-2011

Run ID: A118726

Included Lab Sample IDs: 2401459, 2401461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118736

Included Lab Sample IDs: 2401460, 2401462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	97.2	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A118740

Included Lab Sample IDs: 2401460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118788

Included Lab Sample IDs: 2401460, 2401462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118830

Included Lab Sample IDs: 2401460, 2401462

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118861

Included Lab Sample IDs: 2401460, 2401462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	109	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A118925

Included Lab Sample IDs: 2401462

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

Quality Assurance Report

Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A118968

Included Lab Sample IDs: 2401459, 2401461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	102	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity	98.6				0.564	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	100	99.8			0.159
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.0	100			1.79
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	97.5	99.5			1.83
EPA 365.1 Rev. 2.0	Total-P	100	95.6	96.4			0.753
SM 2320 B-2011	Total Alkalinity	96.5				1.23	
SM 2540 D-2015	TSS	102					
SM 4500-F- C-2011	Fluoride		101	101			0.483
SM 5310 B-2011	Organic Carbon	99.3	90.1	90.2			0.0984
	Organic Carbon	105	95.9	96.0			0.0809

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2401459, 2401461
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2401460, 2401462
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2401460, 2401462
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2401460, 2401462
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2401460, 2401462
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2401459, 2401461
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2401459, 2401461
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2401459, 2401461
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2401460, 2401462

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	04/19/2023			04/19/2023 14:34	Khloe J Berg	2401459
	04/19/2023			04/19/2023 14:35	Khloe J Berg	2401461
EPA 350.1 Rev. 2.0	04/19/2023			04/26/2023 13:31	Ping Hua	2401462
	04/19/2023			04/26/2023 13:35	Ping Hua	2401460
EPA 351.2 Rev. 2.0	04/19/2023	04/25/2023 13:23	Simonne.V. Calhoun	04/28/2023 15:22	Samantha L Bates	2401460
	04/19/2023	04/25/2023 13:23	Simonne.V. Calhoun	04/28/2023 15:23	Samantha L Bates	2401462
EPA 353.2 Rev. 2.0	04/19/2023			04/26/2023 15:00	Anna M. Plaviak	2401460
	04/19/2023			04/26/2023 15:01	Anna M. Plaviak	2401462
EPA 365.1 Rev. 2.0	04/19/2023	04/21/2023 14:25	Adam P Silver	04/24/2023 14:29	James L Waggerby	2401462
	04/19/2023	04/21/2023 14:25	Adam P Silver	04/24/2023 14:40	James L Waggerby	2401460
SM 2320 B-2011	04/19/2023			04/22/2023 08:07	Dale L. Simmons	2401459
	04/19/2023			04/22/2023 08:18	Dale L. Simmons	2401461
SM 2540 D-2015	04/19/2023			04/21/2023 14:41	Yijie Li	2401459, 2401461
SM 4500-F- C-2011	04/19/2023			05/05/2023 02:17	Adam P Silver	2401459
	04/19/2023			05/05/2023 02:22	Adam P Silver	2401461
SM 5310 B-2011	04/19/2023			04/22/2023 05:33	Elise M. Gillis	2401460
	04/19/2023			05/03/2023 00:51	Elise M. Gillis	2401462