

Chemical Analysis Report

SO-DIST-2023-03-22-02

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

Event Description: **2023 SMP: Down the Hatchee**
Request ID: **RQ-2023-03-20-46**
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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Date Certified: 18-APR-2023 11:24



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: CaloosaAboveBridgeSt

Collection Date/Time: 03/21/2023 10:15

Field ID: G3SD0178

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2395548	DEP SOP: NU-094-1	Color (true)	53		PCU	P427511	
	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P427502	
	EPA 300.0 Rev. 2.1	Chloride	50		mg Cl/L	P427857	
		Sulfate	22		mg SO4/L	P427860	
	SM 2320 B-2011	Total Alkalinity	103		mg CaCO3/L	P427600	
	SM 2540 C-2015	TDS	271		mg/L	P427823	
	SM 2540 D-2015	TSS	10		mg/L	P427800	
	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P427605	
2395549	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P427633	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P428381	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P427816	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P427598	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P427829	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: DEP SOP: NU-094-1
Batch ID: P427511

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427502

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427857

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427860

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427633

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428381

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427816

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427598

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

Reference Method: SM 2320 B-2011
Batch ID: P427600

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P427823

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P427800

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P427605

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P427829

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P427511

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	93.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427502

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427857

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427860

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428381

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: P427816

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427598

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

Reference Method: SM 2320 B-2011
Batch ID: P427600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.1		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P427823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	98.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P427800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.7		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P427605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395438	Chloride	96.3		P	90 - 110
2395677	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395438	Sulfate	98.4		P	90 - 110
2395677	Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395549	Ammonia-N	97.8	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2396676	Kjeldahl Nitrogen	97.2	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395587	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395639	Total-P	101	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P427605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395392	Fluoride	103	103	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395314	Organic Carbon	93.8	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P427511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395391	Color (true)	3.59	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P427502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395391	Turbidity	0.678	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395438	Chloride	0.318	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395549	Ammonia-N	0.437	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2396676	Kjeldahl Nitrogen	1.37	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395587	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395639	Total-P	0.0	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P427600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395392	Total Alkalinity	0.792	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P427823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395432	TDS	1.12	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P427605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395392	Fluoride	0.539	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P427829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395314	Organic Carbon	1.55	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: A118137
Included Lab Sample IDs: 2395548

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

Reference Method: DEP SOP: NU-094-1
Run ID: A118141
Included Lab Sample IDs: 2395548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.7	99.3	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A118170
Included Lab Sample IDs: 2395548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.2	96.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A118170
Included Lab Sample IDs: 2395548

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118183
Included Lab Sample IDs: 2395549

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118197
Included Lab Sample IDs: 2395549

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A118247
Included Lab Sample IDs: 2395548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	100	P/P	90 - 110
Sulfate	97.7	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118262
Included Lab Sample IDs: 2395549

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A118274

Included Lab Sample IDs: 2395549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118562

Included Lab Sample IDs: 2395549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	97.3	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	MS
DEP SOP: NU-094-1	Color (true)	93.0			3.59	
EPA 180.1 Rev. 2.0	Turbidity	99.6			0.678	
EPA 300.0 Rev. 2.1	Chloride	101	96.3	98.5	0.318	
	Sulfate	99.5	98.4	96.0		
EPA 350.1 Rev. 2.0	Ammonia-N	93.2	97.8	98.4		0.437
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.2	95.6		1.37
EPA 353.2 Rev. 2.0	NO2NO3-N	103	105	104		0.957
EPA 365.1 Rev. 2.0	Total-P	98.8	101	101		0.0
SM 2320 B-2011	Total Alkalinity	95.1			0.792	
SM 2540 C-2015	TDS	98.8			1.12	
SM 2540 D-2015	TSS	92.7				
SM 4500-F- C-2011	Fluoride	102	103	103		0.539
SM 5310 B-2011	Organic Carbon	94.4	93.8	95.5		1.55

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2395548
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2395548
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2395548
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2395548
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2395549
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2395549
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2395549
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2395549
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2395548
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2395548
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2395548
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2395548
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2395549

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	03/22/2023			03/22/2023 16:40	Alexis Price	2395548
EPA 180.1 Rev. 2.0	03/22/2023			03/22/2023 14:15	Anna M. Plaviak	2395548
EPA 300.0 Rev. 2.1	03/22/2023			03/30/2023 04:15	Anna M. Plaviak	2395548
EPA 350.1 Rev. 2.0	03/22/2023			03/24/2023 11:10	Ping Hua	2395549
EPA 351.2 Rev. 2.0	03/22/2023	04/12/2023 13:25	Dana G. Hughes	04/13/2023 16:13	Samantha L Bates	2395549
EPA 353.2 Rev. 2.0	03/22/2023			03/29/2023 10:40	Beverly Y. Sanders	2395549
EPA 365.1 Rev. 2.0	03/22/2023	03/24/2023 10:10	Alexis Price	03/27/2023 09:22	James L Waggerby	2395549
SM 2320 B-2011	03/22/2023			03/23/2023 22:44	Chandler E Cox	2395548
SM 2540 C-2015	03/22/2023			03/23/2023 14:25	Blanca Fach	2395548
SM 2540 D-2015	03/22/2023			03/23/2023 14:25	Blanca Fach	2395548
SM 4500-F- C-2011	03/22/2023			03/23/2023 22:44	Chandler E Cox	2395548
SM 5310 B-2011	03/22/2023			03/29/2023 00:12	Elise M. Gillis	2395549