

Chemical Analysis Report

SO-DIST-2023-08-17-01

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

Event Description: **2023 SMP: Continuous Pickup**
Request ID: **RQ-2023-08-07-28**
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: 12-SEP-2023 12:12



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: YUCCAFLATWOODS MID

Collection Date/Time: 08/16/2023 08:10

Field ID: G2SD0052

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431994	DEP SOP: NU-094-1	Color (true)	120		PCU	P433993	
	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P434000	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P434299	
		Sulfate	2.0E+03		mg SO4/L	P434304	
	SM 2320 B-2011	Total Alkalinity	137		mg CaCO3/L	P434400	
	SM 2540 C-2015	TDS	2.58E+04		mg/L	P434488	
	SM 2540 D-2015	TSS	3	U	mg/L	P434271	
2431995	SM 4500-F- C-2011	Fluoride	1.0		mg F/L	P434552	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P434435	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P434647	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434557	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P434272	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P434204	

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: DEP SOP: NU-094-1
Batch ID: P433993

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434000

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434299

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434304

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434435

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434647

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434557

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434272

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

Reference Method: SM 2320 B-2011
Batch ID: P434400

Component	Result	Code	Units
Total Alkalinity	1.1	I	mg CaCO3/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P434488

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434271

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434552

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P434204

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: P433993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434299

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434435

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434647

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: P434557

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434272

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

Reference Method: SM 2320 B-2011
Batch ID: P434400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.9		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P434488

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

Reference Method: SM 2540 D-2015
Batch ID: P434271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431932	Chloride	103		P	90 - 110
2432064	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431932	Sulfate	98.8		P	90 - 110
2432064	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431898	Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432936	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431897	NO2NO3-N	96.2	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431289	Total-P	104	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P434552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432583	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432200	Organic Carbon	88.5	91.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431907	Color (true)	0.912	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431801	Turbidity	1.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431932	Chloride	1.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431932	Sulfate	1.27	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431898	Ammonia-N	0.907	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432936	Kjeldahl Nitrogen	1.86	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431897	NO2NO3-N	0.518	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431289	Total-P	0.607	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P434400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431629	Total Alkalinity	0.603	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431220	TDS	2.25	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432583	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P434204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432200	Organic Carbon	2.22	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A121099

Included Lab Sample IDs: 2431994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121101

Included Lab Sample IDs: 2431994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	97.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121182

Included Lab Sample IDs: 2431994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	99.9	P/P	90 - 110
Sulfate	99.0	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A121186

Included Lab Sample IDs: 2431995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.9	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121256

Included Lab Sample IDs: 2431995

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

Reference Method: SM 2320 B-2011

Run ID: A121265

Included Lab Sample IDs: 2431994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121289

Included Lab Sample IDs: 2431995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121345

Included Lab Sample IDs: 2431994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121351

Included Lab Sample IDs: 2431995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121418

Included Lab Sample IDs: 2431995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	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	MS
DEP SOP: NU-094-1	Color (true)	100			0.912	
EPA 180.1 Rev. 2.0	Turbidity	98.1			1.26	
EPA 300.0 Rev. 2.1	Chloride	102	103	102	1.49	
	Sulfate	99.1	98.8	99.0	1.27	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.4	100		0.907
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	103		1.86
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	96.2	96.7		0.518
EPA 365.1 Rev. 2.0	Total-P	106	104	105		0.607
SM 2320 B-2011	Total Alkalinity	96.9			0.603	
SM 2540 C-2015	TDS	101			2.25	
SM 2540 D-2015	TSS	93.1				
SM 4500-F- C-2011	Fluoride	98.9	102	102		0.0
SM 5310 B-2011	Organic Carbon	95.1	88.5	91.2		2.22

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2431994
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2431994
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2431994
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2431994
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2431995
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2431995
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2431995
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2431995
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2431994
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2431994
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2431994
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2431994
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2431995

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	08/17/2023			08/17/2023 15:26	Alexis Price	2431994
EPA 180.1 Rev. 2.0	08/17/2023			08/17/2023 14:22	Khloe J Berg	2431994
EPA 300.0 Rev. 2.1	08/17/2023			08/24/2023 07:21	James L Waggerby	2431994
EPA 350.1 Rev. 2.0	08/17/2023			08/28/2023 13:48	Khloe J Berg	2431995
EPA 351.2 Rev. 2.0	08/17/2023	09/07/2023 13:14	Simonne.V. Calhoun	09/08/2023 11:40	Samantha L Bates	2431995
EPA 353.2 Rev. 2.0	08/17/2023			08/29/2023 11:41	Anna M. Plaviak	2431995
EPA 365.1 Rev. 2.0	08/17/2023	08/24/2023 14:28	Alexis Price	08/25/2023 12:27	James L Waggerby	2431995
SM 2320 B-2011	08/17/2023			08/25/2023 22:17	Sarah A Nixon	2431994
SM 2540 C-2015	08/17/2023			08/18/2023 16:04	Yijie Li	2431994
SM 2540 D-2015	08/17/2023			08/18/2023 16:04	Yijie Li	2431994
SM 4500-F- C-2011	08/17/2023			09/02/2023 03:04	Dale L. Simmons	2431994
SM 5310 B-2011	08/17/2023			08/22/2023 22:22	Elise M. Gillis	2431995