

Chemical Analysis Report

SW-DIST-2023-12-19-05

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

Event Description: **Run 1**
Request ID: **RQ-2023-12-04-46**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Marek Topolski, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 10-JAN-2024 12:49



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: CHASSAHOWITZKA RIVER DOWNSTREAM OF HOUSES **Collection Date/Time: 12/18/2023 10:50**

Field ID: G5SW0065

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2457945	DEP SOP: NU-094-1	Color (true)	64	A	PCU	P439201	
	EPA 180.1 Rev. 2.0	Turbidity	2.1	A	NTU	P439227	
	EPA 300.0 Rev. 2.1	Chloride	4.9E+03		mg Cl/L	P439439	
		Sulfate	720		mg SO4/L	P439444	
	SM 2320 B-2011	Total Alkalinity	136	A	mg CaCO3/L	P439460	
	SM 2540 C-2015	TDS	8.36E+03		mg/L	P439635	
	SM 2540 D-2015	TSS	3	IA	mg/L	P439573	
	SM 4500-F- C-2011	Fluoride	0.33		mg F/L	P439462	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P439342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P439244	
2457946	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P439388	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P439311	
	SM 5310 B-2014	Organic Carbon	8.1		mg C/L	P439616	

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: P439201

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439227

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439439

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439444

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439342

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439244

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439388

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439311

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

Reference Method: SM 2320 B-2011
Batch ID: P439460

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: P439635

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P439573

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P439462

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P439616

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: P439201

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439227

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439439

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439444

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	90.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439244

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: P439388

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: P439311

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

Reference Method: SM 2320 B-2011
Batch ID: P439460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P439635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P439573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P439462

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

Reference Method: SM 5310 B-2014
Batch ID: P439616

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457901	Chloride	102		P	90 - 110
2458032	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457901	Sulfate	101		P	90 - 110
2458032	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457009	Ammonia-N	97.6	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457966	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457946	NO2NO3-N	98.4	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458115	Total-P	96.0	94.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P439462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457945	Fluoride	99.5	101	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P439616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2457946	Organic Carbon	89.8	90.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P439201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457945	Color (true)	7.12	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457945	Turbidity	19.7	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457901	Chloride	1.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457901	Sulfate	1.34	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457009	Ammonia-N	1.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457966	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457946	NO2NO3-N	0.384	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458115	Total-P	1.75	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P439460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457945	Total Alkalinity	1.48	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P439635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458044	TDS	5.08	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P439462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457945	Fluoride	0.999	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P439616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2457946	Organic Carbon	0.815	Spike	P	0 - 15

* 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: A123320

Included Lab Sample IDs: 2457945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.9	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A123330

Included Lab Sample IDs: 2457945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A123338

Included Lab Sample IDs: 2457945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123372

Included Lab Sample IDs: 2457946

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123392

Included Lab Sample IDs: 2457946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123402

Included Lab Sample IDs: 2457946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.0	99.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A123420

Included Lab Sample IDs: 2457945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A123420

Included Lab Sample IDs: 2457945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	101	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A123426

Included Lab Sample IDs: 2457946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	97.3	P/P	90 - 110

Reference Method: SM 5310 B-2014

Run ID: A123504

Included Lab Sample IDs: 2457946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	122	98.0	P/P	70 - 130

* 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
DEP SOP: NU-094-1	Color (true)	101				7.12	
EPA 180.1 Rev. 2.0	Turbidity	103				19.7	
EPA 300.0 Rev. 2.1	Chloride	104	102	98.7		1.38	
	Sulfate	103	101	98.8		1.34	
EPA 350.1 Rev. 2.0	Ammonia-N	90.8	97.6	99.8			1.93
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	100			1.39
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.4	98.9			0.384
EPA 365.1 Rev. 2.0	Total-P	104	96.0	94.3			1.75
SM 2320 B-2011	Total Alkalinity	101				1.48	
SM 2540 C-2015	TDS	96.4				5.08	
SM 2540 D-2015	TSS	96.8					
SM 4500-F- C-2011	Fluoride	102	99.5	101			0.999
SM 5310 B-2014	Organic Carbon	93.8	89.8	90.7			0.815

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2457945
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2457945
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2457945
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2457945
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2457946
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2457946
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2457946
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2457946
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2457945
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2457945
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2457945
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2457945
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2457946

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	12/19/2023			12/19/2023 14:43	Chandler E Cox	2457945
EPA 180.1 Rev. 2.0	12/19/2023			12/19/2023 13:49	Anna M. Plaviak	2457945
EPA 300.0 Rev. 2.1	12/19/2023			12/23/2023 00:11	James L Waggeberby	2457945
EPA 350.1 Rev. 2.0	12/19/2023			12/20/2023 12:10	Khloe J Berg	2457946
EPA 351.2 Rev. 2.0	12/19/2023	12/20/2023 14:15	Simonne.V. Calhoun	12/27/2023 12:35	Samantha L Bates	2457946
EPA 353.2 Rev. 2.0	12/19/2023			12/21/2023 12:05	Anna M. Plaviak	2457946
EPA 365.1 Rev. 2.0	12/19/2023	12/21/2023 15:43	Adam P Silver	12/22/2023 12:56	Elise M. Gillis	2457946
SM 2320 B-2011	12/19/2023			12/22/2023 23:54	Dale L. Simmons	2457945
SM 2540 C-2015	12/19/2023			12/21/2023 15:04	Yijie Li	2457945
SM 2540 D-2015	12/19/2023			12/21/2023 15:04	Yijie Li	2457945
SM 4500-F- C-2011	12/19/2023			12/22/2023 23:05	Dale L. Simmons	2457945
SM 5310 B-2014	12/19/2023			01/05/2024 05:23	Kenneth H Lee	2457946