

Chemical Analysis Report

CEN-DIST-2023-09-12-02

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

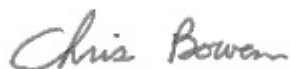
Event Description: **Citrus Blue**
Request ID: **RQ-2023-08-14-45**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 02-OCT-2023 10:02



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: CITRUS BLUE SPRING

Collection Date/Time: 09/11/2023 11:05

Field ID: G4CE0231

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2435932	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P434860	
	EPA 180.1 Rev. 2.0	Turbidity	0.20	I	NTU	P434872	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P435109	
		Sulfate	18		mg SO4/L	P435113	
	SM 2320 B-2011	Total Alkalinity	152		mg CaCO3/L	P435268	
	SM 2540 C-2015	TDS	194		mg/L	P435297	
	SM 2540 D-2015	TSS	2	U	mg/L	P435203	
	SM 4500-F- C-2011	Fluoride	0.050	I	mg F/L	P435051	
2435933	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P434995	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P435445	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.90		mg N/L	P435252	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P435246	
	SM 5310 B-2011	Organic Carbon	0.68	I	mg C/L	P435498	

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.

SM 5310 B-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P434860

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434872

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435109

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435113

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434995

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435445

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435252

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435246

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

Reference Method: SM 2320 B-2011
Batch ID: P435268

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: P435297

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435203

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435051

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435498

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: P434860

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: P434872

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435109

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435445

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435246

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

Reference Method: SM 2320 B-2011
Batch ID: P435268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P435297

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

Reference Method: SM 2540 D-2015
Batch ID: P435203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P435051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435440	Chloride	97.5		P	90 - 110
2435638	Chloride	94.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435440	Sulfate	99.3		P	90 - 110
2435638	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435909	Ammonia-N	98.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435910	Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435311	NO2NO3-N	92.0	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435957	Total-P	106	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P435051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435986	Fluoride	99.1	100	P/P	94 - 106

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435951	Color (true)	1.74	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435808	Turbidity	5.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435440	Chloride	0.0128	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435909	Ammonia-N	2.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435910	Kjeldahl Nitrogen	2.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435311	NO2NO3-N	1.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435957	Total-P	0.795	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P435268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435986	Total Alkalinity	1.56	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P435297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435580	TDS	2.50	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435986	Fluoride	1.00	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435840	Organic Carbon	0.287	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: A121479

Included Lab Sample IDs: 2435932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121482

Included Lab Sample IDs: 2435932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121535

Included Lab Sample IDs: 2435933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121553

Included Lab Sample IDs: 2435932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121585

Included Lab Sample IDs: 2435932

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121654

Included Lab Sample IDs: 2435933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.5	96.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121658

Included Lab Sample IDs: 2435932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.1	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121698

Included Lab Sample IDs: 2435933

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

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A121761

Included Lab Sample IDs: 2435933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121786

Included Lab Sample IDs: 2435933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	96.5	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)	101			1.74	
EPA 180.1 Rev. 2.0	Turbidity	102			5.02	
EPA 300.0 Rev. 2.1	Chloride	99.5	97.5	94.9	0.0128	
	Sulfate	99.3	99.3	98.0		
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.2	100		2.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	100	104		2.00
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	92.0	93.0		1.08
EPA 365.1 Rev. 2.0	Total-P	105	106	107		0.795
SM 2320 B-2011	Total Alkalinity	98.1			1.56	
SM 2540 C-2015	TDS	99.6			2.50	
SM 2540 D-2015	TSS	95.3				
SM 4500-F- C-2011	Fluoride	99.3	99.1	100		1.00
SM 5310 B-2011	Organic Carbon	96.3				0.287

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2435932
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2435932
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2435932
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2435932
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2435933
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2435933
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2435933
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2435933
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2435932
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2435932
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2435932
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2435932
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2435933

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	09/12/2023			09/12/2023 15:21	Chandler E Cox	2435932
EPA 180.1 Rev. 2.0	09/12/2023			09/12/2023 14:44	Khloe J Berg	2435932
EPA 300.0 Rev. 2.1	09/12/2023			09/15/2023 22:49	James L Waggeberby	2435932
EPA 350.1 Rev. 2.0	09/12/2023			09/14/2023 12:55	Khloe J Berg	2435933
EPA 351.2 Rev. 2.0	09/12/2023	09/25/2023 15:30	Simonne.V. Calhoun	09/27/2023 12:36	Samantha L Bates	2435933
EPA 353.2 Rev. 2.0	09/12/2023			09/18/2023 16:43	Anna M. Plaviak	2435933
EPA 365.1 Rev. 2.0	09/12/2023	09/20/2023 15:00	Alexis Price	09/21/2023 13:17	Simonne.V. Calhoun	2435933
SM 2320 B-2011	09/12/2023			09/20/2023 14:26	Adam P Silver	2435932
SM 2540 C-2015	09/12/2023			09/13/2023 15:46	Yijie Li	2435932
SM 2540 D-2015	09/12/2023			09/13/2023 15:46	Yijie Li	2435932
SM 4500-F- C-2011	09/12/2023			09/14/2023 08:34	Chandler E Cox	2435932
SM 5310 B-2011	09/12/2023			09/25/2023 20:04	Elise M. Gillis	2435933