

Chemical Analysis Report

NE-DIST-2023-08-15-03

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

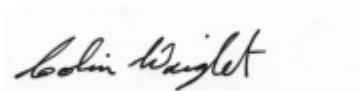
Event Description: **Gainesville Lakes**
Request ID: **RQ-2023-07-17-14**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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

Certified by: Colin Wright, Program Administrator

Date Certified: 12-SEP-2023 09:17

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

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: GLEN SPRING

Collection Date/Time: 08/14/2023 14:20

Field ID: G1NE0952

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431052	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P433866	
	EPA 180.1 Rev. 2.0	Turbidity	0.15	I	NTU	P433878	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P434071	
		Sulfate	18		mg SO4/L	P434074	
	SM 2320 B-2011	Total Alkalinity	138		mg CaCO3/L	P434015	
	SM 2540 C-2015	TDS	218		mg/L	P434487	
	SM 2540 D-2015	TSS	2	U	mg/L	P434267	
	SM 4500-F- C-2011	Fluoride	0.32		mg F/L	P434018	
2431053	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P434316	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P434645	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.5		mg N/L	P434568	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P433963	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P434115	

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 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: P433866

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433878

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434071

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434074

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434316

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434645

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434568

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433963

Component	Result	Code	Units
Total-P	0.004	I	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P434015

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: P434487

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434267

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434018

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P434115

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: P433866

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434071

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434645

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434568

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433963

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

Reference Method: SM 2320 B-2011
Batch ID: P434015

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.0		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P434487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.3		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P434267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434018

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

Reference Method: SM 5310 B-2011
Batch ID: P434115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430783	Chloride	98.3		P	90 - 110
2430996	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430783	Sulfate	97.2		P	90 - 110
2430996	Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431053	Ammonia-N	97.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431565	Kjeldahl Nitrogen	101	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431565	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431053	Total-P	104	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P434018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431101	Fluoride	99.5	99.5	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2429953	Organic Carbon	98.0		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431056	Color (true)	3.10	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430997	Turbidity	6.77	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430783	Chloride	1.49	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431053	Ammonia-N	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431565	Kjeldahl Nitrogen	3.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431565	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431053	Total-P	0.967	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P434015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431101	Total Alkalinity	0.916	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P434487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430825	TDS	3.87	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431101	Fluoride	0.0	Spike	P	0 - 1.9

* 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: A121044

Included Lab Sample IDs: 2431052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121048

Included Lab Sample IDs: 2431052

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121057

Included Lab Sample IDs: 2431052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.1	96.9	P/P	90 - 110
Sulfate	96.8	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121107

Included Lab Sample IDs: 2431053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121111

Included Lab Sample IDs: 2431052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121111

Included Lab Sample IDs: 2431052

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

Reference Method: SM 5310 B-2011

Run ID: A121148

Included Lab Sample IDs: 2431053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	96.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121231

Included Lab Sample IDs: 2431053

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

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121418

Included Lab Sample IDs: 2431053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	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)	103			3.10	
EPA 180.1 Rev. 2.0	Turbidity	98.0			6.77	
EPA 300.0 Rev. 2.1	Chloride	98.6	98.3	98.0	1.49	
	Sulfate	96.8	97.2	95.7		
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	97.0	98.8		1.75
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	101	107		3.85
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	100	104	102		0.967
SM 2320 B-2011	Total Alkalinity	98.0			0.916	
SM 2540 C-2015	TDS	93.3			3.87	
SM 2540 D-2015	TSS	91.4				
SM 4500-F- C-2011	Fluoride	101	99.5	99.5		0.0
SM 5310 B-2011	Organic Carbon	97.3	98.0			

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2431052
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2431052
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2431052
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2431052
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2431053
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2431053
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2431053
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2431053
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2431052
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2431052
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2431052
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2431052
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2431053

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	08/15/2023			08/15/2023 14:51	Samantha L Bates	2431052
EPA 180.1 Rev. 2.0	08/15/2023			08/15/2023 14:58	Chandler E Cox	2431052
EPA 300.0 Rev. 2.1	08/15/2023			08/18/2023 02:18	James L Waggeberby	2431052
EPA 350.1 Rev. 2.0	08/15/2023			08/24/2023 12:55	Ping Hua	2431053
EPA 351.2 Rev. 2.0	08/15/2023	09/07/2023 13:14	Simonne.V. Calhoun	09/08/2023 10:40	Samantha L Bates	2431053
EPA 353.2 Rev. 2.0	08/15/2023			09/01/2023 13:47	Anna M. Plaviak	2431053
EPA 365.1 Rev. 2.0	08/15/2023	08/17/2023 14:21	Adam P Silver	08/17/2023 16:37	James L Waggeberby	2431053
SM 2320 B-2011	08/15/2023			08/17/2023 14:01	Dale L. Simmons	2431052
SM 2540 C-2015	08/15/2023			08/18/2023 16:04	Yijie Li	2431052
SM 2540 D-2015	08/15/2023			08/18/2023 16:04	Yijie Li	2431052
SM 4500-F- C-2011	08/15/2023			08/17/2023 14:01	Dale L. Simmons	2431052
SM 5310 B-2011	08/15/2023			08/19/2023 02:52	Elise M. Gillis	2431053