

Chemical Analysis Report

CEN-DIST-2022-10-18-01

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

Event Description: **Lake Dias**
Request ID: **RQ-2022-10-17-21**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 07-NOV-2022 15:55

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Lake Dias @ Center

Collection Date/Time: 10/17/2022 11:48

Field ID: G2CE0235

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2362861	DEP SOP: NU-094-1	Color (true)	120		PCU	P421042	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P421047	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P421653	
		Sulfate	3.5		mg SO4/L	P421657	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P421305	
	SM 2540 C-2015	TDS	75		mg/L	P421545	
	SM 2540 D-2015	TSS	4	I	mg/L	P421494	
	SM 4500-F- C-2011	Fluoride	0.044	I	mg F/L	P421310	
2362862	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P421337	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P421288	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P421077	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P421085	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P421130	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: 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: P421042

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421047

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421653

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421657

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421337

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421288

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421077

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421085

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

Reference Method: SM 2320 B-2011
Batch ID: P421305

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: P421545

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P421494

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P421130

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: P421042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421653

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421337

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421288

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: P421077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421085

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

Reference Method: SM 2320 B-2011
Batch ID: P421305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P421545

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

Reference Method: SM 2540 D-2015
Batch ID: P421494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363887	Chloride	94.8		P	90 - 110
2363888	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363887	Sulfate	96.2		P	90 - 110
2363888	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362835	Ammonia-N	99.8	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362833	NO2NO3-N	90.0	90.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362803	Total-P	108	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363803	Fluoride	96.8	97.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362862	Organic Carbon	102	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P421042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362894	Color (true)	1.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362794	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363887	Chloride	4.04	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363887	Sulfate	5.10	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362835	Ammonia-N	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362751	Kjeldahl Nitrogen	5.39	Sample	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362833	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362803	Total-P	0.814	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P421305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363803	Total Alkalinity	0.742	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P421545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362934	TDS	3.92	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P421494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362934	TSS	6.45	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363803	Fluoride	0.490	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P421130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362862	Organic Carbon	0.606	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: A115369
Included Lab Sample IDs: 2362861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	97.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A115372
Included Lab Sample IDs: 2362861

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115384
Included Lab Sample IDs: 2362862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.5	96.0	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A115411
Included Lab Sample IDs: 2362862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	99.2	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A115475
Included Lab Sample IDs: 2362861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115475
Included Lab Sample IDs: 2362861

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115477
Included Lab Sample IDs: 2362862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115485
Included Lab Sample IDs: 2362862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115503

Included Lab Sample IDs: 2362862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115558

Included Lab Sample IDs: 2362861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	100	P/P	90 - 110
Sulfate	102	101	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)	99.8			1.19	
EPA 180.1 Rev. 2.0	Turbidity	99.9			0.0	
EPA 300.0 Rev. 2.1	Chloride	96.8	94.8	99.7	4.04	
	Sulfate	97.3	96.2	101	5.10	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.8	102		1.51
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104			5.39	
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	90.0	90.5		0.504
EPA 365.1 Rev. 2.0	Total-P	105	108	107		0.814
SM 2320 B-2011	Total Alkalinity	103			0.742	
SM 2540 C-2015	TDS	102			3.92	
SM 2540 D-2015	TSS	91.1			6.45	
SM 4500-F- C-2011	Fluoride	99.2	96.8	97.4		0.490
SM 5310 B-2011	Organic Carbon	101	102	101		0.606

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2362861
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2362861
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2362861
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2362861
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2362862
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2362862
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2362862
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2362862
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2362861
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2362861
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2362861
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2362861
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2362862

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	10/18/2022			10/18/2022 15:13	Blanca Fach	2362861
EPA 180.1 Rev. 2.0	10/18/2022			10/18/2022 14:07	Khloe J Berg	2362861
EPA 300.0 Rev. 2.1	10/18/2022			10/28/2022 20:43	Anna M. Plaviak	2362861
EPA 350.1 Rev. 2.0	10/18/2022			10/24/2022 16:14	Judith K. Clark	2362862
EPA 351.2 Rev. 2.0	10/18/2022	10/24/2022 14:48	Samantha L Bates	10/25/2022 12:18	Samantha L Bates	2362862
EPA 353.2 Rev. 2.0	10/18/2022			10/19/2022 10:28	Beverly Y. Sanders	2362862
EPA 365.1 Rev. 2.0	10/18/2022	10/20/2022 15:06	Adam P Silver	10/24/2022 10:26	James L Waggerby	2362862
SM 2320 B-2011	10/18/2022			10/22/2022 09:54	Dale L. Simmons	2362861
SM 2540 C-2015	10/18/2022			10/19/2022 16:26	Yijie Li	2362861
SM 2540 D-2015	10/18/2022			10/19/2022 16:26	Yijie Li	2362861
SM 4500-F- C-2011	10/18/2022			10/22/2022 09:54	Dale L. Simmons	2362861
SM 5310 B-2011	10/18/2022			10/19/2022 23:51	Khloe J Berg	2362862