

Chemical Analysis Report

CEN-DIST-2021-11-30-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Sweetwater/Salt Creek**
Request ID: **RQ-2021-08-02-50**
Customer: **CEN-DIST**
Project ID: **BMAP**

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 16-DEC-2021 10:00



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: Salt Creek @ Packard Ave

Collection Date/Time: 11/29/2021 11:15

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291444	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P407250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P406993	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.094		mg N/L	P406860	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P406828	
2291446	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P406832	
2291448	SM 2540 D-2011	TSS	3	I	mg/L	P407348	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Sweetwater Creek at Florida Avenue

Collection Date/Time: 11/29/2021 11:36

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291445	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P407250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P406994	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.65		mg N/L	P406860	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P406828	
2291447	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P406832	
2291449	SM 2540 D-2011	TSS	5	I	mg/L	P407348	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406993

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406994

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406860

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406828

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406832

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2540 D-2011
Batch ID: P407348

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406993

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406994

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406828

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291237	Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291402	Kjeldahl Nitrogen	95.7	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291470	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291426	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291445	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291472	O-Phosphate-P	101	100	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291237	Ammonia-N	0.991	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291402	Kjeldahl Nitrogen	1.40	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291470	Kjeldahl Nitrogen	1.18	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291426	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291445	Total-P	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291472	O-Phosphate-P	0.497	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109128

Included Lab Sample IDs: 2291446, 2291447

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109138

Included Lab Sample IDs: 2291444, 2291445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109188

Included Lab Sample IDs: 2291444, 2291445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109213

Included Lab Sample IDs: 2291444, 2291445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.8	P/P	90 - 110
Kjeldahl Nitrogen	95.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109293

Included Lab Sample IDs: 2291444, 2291445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	107	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	Precision SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.6	101			0.991
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	95.7	97.2			1.40
	Kjeldahl Nitrogen	102	103	104			1.18
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	103	103	101			1.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	101	100			0.497

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2291444, 2291445
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2291444, 2291445
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2291444, 2291445
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2291444, 2291445
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2291446, 2291447
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2291448, 2291449

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	11/30/2021			12/09/2021 13:33	Ping Hua	2291444
	11/30/2021			12/09/2021 13:35	Ping Hua	2291445
EPA 351.2 Rev. 2.0	11/30/2021	12/03/2021 12:03	Benjamin T. Nordmann	12/06/2021 10:07	Alexandra J Mattheus	2291444
	11/30/2021	12/03/2021 12:03	Benjamin T. Nordmann	12/06/2021 10:15	Alexandra J Mattheus	2291445
EPA 353.2 Rev. 2.0	11/30/2021			12/01/2021 09:19	Beverly Y. Sanders	2291444
	11/30/2021			12/01/2021 09:20	Beverly Y. Sanders	2291445
EPA 365.1 Rev. 2.0	11/30/2021	12/01/2021 13:15	Simonne.V. Calhoun	12/02/2021 17:41	Sarah A Nixon	2291445
	11/30/2021	12/01/2021 13:15	Simonne.V. Calhoun	12/02/2021 17:46	Sarah A Nixon	2291444
EPA 365.1 Rev. 2.0 dissolved	11/30/2021			11/30/2021 14:44	James L Waggeberby	2291446
	11/30/2021			11/30/2021 14:45	James L Waggeberby	2291447
SM 2540 D-2011	11/30/2021			12/03/2021 15:35	Yijie Li	2291448, 2291449