

Chemical Analysis Report

NE-DIST-2021-05-27-01

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

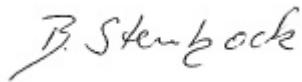
Event Description: **Moses Creek**
Request ID: **RQ-2021-05-03-32**
Customer: **NE-DIST**
Project ID: **SMP**

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

Date Certified: 21-JUN-2021 16:20



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: Moses Creek at Preserve Dock

Collection Date/Time: 05/26/2021 10:35

Field ID: G5NE0004

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2250665	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P398943	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P399027	
	SM 2540 D-2011	TSS	24		mg/L	P399107	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P399029	
2250666	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P399320	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P399326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398976	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P398975	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P399731	
2250667	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P398940	

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 180.1 Rev. 2.0
Batch ID: P398943

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399320

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399326

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398976

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: P398975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398940

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

Reference Method: SM 2320 B-2011
Batch ID: P399027

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P399107

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399029

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P399731

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399320

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399326

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398976

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: P398975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398940

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

Reference Method: SM 2320 B-2011
Batch ID: P399027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.2		P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P399029

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P399731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250818	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2249817	Kjeldahl Nitrogen	95.2	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250477	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250477	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250667	O-Phosphate-P	99.5	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P399029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250822	Fluoride	98.2	98.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P399731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252393	Organic Carbon	98.8	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250593	Turbidity	3.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250818	Ammonia-N	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2249817	Kjeldahl Nitrogen	3.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250477	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250477	Total-P	2.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250667	O-Phosphate-P	0.634	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P399027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250822	Total Alkalinity	0.471	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P399029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250822	Fluoride	0.461	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P399731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252393	Organic Carbon	0.289	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: A105742

Included Lab Sample IDs: 2250667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105744

Included Lab Sample IDs: 2250665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105758

Included Lab Sample IDs: 2250666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A105786

Included Lab Sample IDs: 2250665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105786

Included Lab Sample IDs: 2250665

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105792

Included Lab Sample IDs: 2250666

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105920

Included Lab Sample IDs: 2250666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105971

Included Lab Sample IDs: 2250666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	94.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A106083

Included Lab Sample IDs: 2250666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	97.8	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					3.25	
EPA 350.1 Rev. 2.0	Ammonia-N	100	104	102			1.75
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	95.2	100			3.99
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	104	104	102			2.46
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.5	98.7			0.634
SM 2320 B-2011	Total Alkalinity	97.2				0.471	
SM 4500 F-C-2011	Fluoride	99.2	98.2	98.8			0.461
SM 5310 B-2011	Organic Carbon	99.8	98.8	98.4			0.289

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2250665
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2250666
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2250666
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2250666
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2250666
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2250667
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2250665
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2250665
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2250665
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2250666

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	05/27/2021			05/27/2021 15:49	Yen Ta	2250665
EPA 350.1 Rev. 2.0	05/27/2021			06/07/2021 14:13	Ping Hua	2250666
EPA 351.2 Rev. 2.0	05/27/2021	06/07/2021 13:44	Benjamin T. Nordmann	06/09/2021 15:24	Virginia P. Brown	2250666
EPA 353.2 Rev. 2.0	05/27/2021			05/28/2021 12:06	Beverly Y. Sanders	2250666
EPA 365.1 Rev. 2.0	05/27/2021	05/28/2021 13:30	Yen Ta	06/01/2021 14:35	Shengyu Ding	2250666
EPA 365.1 Rev. 2.0 dissolved	05/27/2021			05/27/2021 15:54	Blanca Fach	2250667
SM 2320 B-2011	05/27/2021			05/29/2021 06:31	Dale L. Simmons	2250665
SM 2540 D-2011	05/27/2021			06/01/2021 14:02	Yijie Li	2250665
SM 4500 F-C-2011	05/27/2021			05/29/2021 02:37	Dale L. Simmons	2250665
SM 5310 B-2011	05/27/2021			06/15/2021 10:17	Madeline Gruver	2250666