

Chemical Analysis Report

SW-DIST-2022-11-17-02

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

Event Description: **SMP Run 20**
Request ID: **RQ-2022-11-14-40**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Bne Paswater

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-DEC-2022 11:00

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: Sandbag Ditch @ 45th

Collection Date/Time: 11/16/2022 11:25

Field ID: G1SW0094

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370605	EPA 180.1 Rev. 2.0	Turbidity	17		NTU	P422520	
	SM 2320 B-2011	Total Alkalinity	219		mg CaCO3/L	P422780	
	SM 2540 D-2015	TSS	32		mg/L	P422927	
	SM 4500-F- C-2011	Fluoride	0.55		mg F/L	P422784	
2370606	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P423044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.7		mg N/L	P423015	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422865	
	EPA 365.1 Rev. 2.0	Total-P	0.60		mg P/L	P422610	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P422886	
2370607	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P422517	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: EPA 180.1 Rev. 2.0
Batch ID: P422520

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423044

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423015

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422865

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: P422610

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422517

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

Reference Method: SM 2320 B-2011
Batch ID: P422780

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

Reference Method: SM 2540 D-2015
Batch ID: P422927

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422784

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P422886

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422520

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423044

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423015

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: P422865

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: P422610

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: P422517

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

Reference Method: SM 2320 B-2011
Batch ID: P422780

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P422927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422784

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P422886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370388	Ammonia-N	99.6	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370386	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370388	Total-P	97.0	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370468	O-Phosphate-P	94.2	94.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P422784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370361	Fluoride	99.9	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370885	Organic Carbon	97.2	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370586	Turbidity	2.62	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370388	Ammonia-N	2.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370606	Kjeldahl Nitrogen	5.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370386	NO2NO3-N	0.436	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370388	Total-P	2.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370468	O-Phosphate-P	0.243	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P422780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370361	Total Alkalinity	1.05	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P422784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370361	Fluoride	0.516	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P422886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370885	Organic Carbon	1.24	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: A116001

Included Lab Sample IDs: 2370607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116002

Included Lab Sample IDs: 2370605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116090

Included Lab Sample IDs: 2370606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116138

Included Lab Sample IDs: 2370605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	98.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116138

Included Lab Sample IDs: 2370605

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116167

Included Lab Sample IDs: 2370606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116179

Included Lab Sample IDs: 2370606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	96.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116231

Included Lab Sample IDs: 2370606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116263

Included Lab Sample IDs: 2370606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	97.0	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	99.0				2.62	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.6	104			2.99
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104					5.92
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104	104			0.436
EPA 365.1 Rev. 2.0	Total-P	104	97.0	99.1			2.17
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	94.2	94.5			0.243
SM 2320 B-2011	Total Alkalinity	99.1				1.05	
SM 2540 D-2015	TSS	98.1					
SM 4500-F- C-2011	Fluoride	100	99.9	101			0.516
SM 5310 B-2011	Organic Carbon	96.4	97.2	95.3			1.24

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2370605
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2370606
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2370606
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2370606
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2370606
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2370607
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2370605
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2370605
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2370605
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2370606

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	11/17/2022			11/17/2022 15:02	Anna M. Plaviak	2370605
EPA 350.1 Rev. 2.0	11/17/2022			12/02/2022 12:38	Ping Hua	2370606
EPA 351.2 Rev. 2.0	11/17/2022	12/02/2022 13:20	Simonne.V. Calhoun	12/05/2022 14:06	Judith K. Clark	2370606
EPA 353.2 Rev. 2.0	11/17/2022			11/29/2022 10:16	Beverly Y. Sanders	2370606
EPA 365.1 Rev. 2.0	11/17/2022	11/21/2022 15:27	Adam P Silver	11/22/2022 09:46	James L Waggeberby	2370606
EPA 365.1 Rev. 2.0 dissolved	11/17/2022			11/17/2022 15:09	Elise M. Gillis	2370607
SM 2320 B-2011	11/17/2022			11/23/2022 06:48	Dale L. Simmons	2370605
SM 2540 D-2015	11/17/2022			11/22/2022 16:06	Yijie Li	2370605
SM 4500-F- C-2011	11/17/2022			11/23/2022 06:48	Dale L. Simmons	2370605
SM 5310 B-2011	11/17/2022			11/29/2022 18:37	Khloe J Berg	2370606