

Chemical Analysis Report

CEN-DIST-2022-07-28-01

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

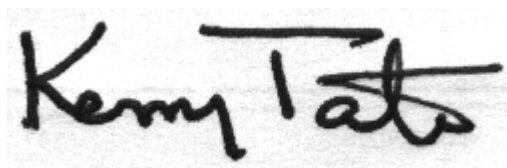
Event Description: **Unnamed Branch Retrieval and Groover Branch**
Request ID: **RQ-2022-07-25-14**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 17-AUG-2022 11:04

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

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: Unnamed Branch @ 750m US of confluence w/ Tomoka River **Collection Date/Time: 07/27/2022 12:14**

Field ID: G5CE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2344314	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P417340	
	SM 2320 B-2011	Total Alkalinity	142		mg CaCO3/L	P417533	
	SM 2540 D-2011	TSS	3	IA	mg/L	P417807	
	SM 4500-F- C-2011	Fluoride	0.43	I	mg F/L	P417535	
2344316	EPA 350.1 Rev. 2.0	Ammonia-N	0.29		mg N/L	P417420	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P417368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P417455	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P417449	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P417494	

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: Groover Branch at Airport Road Bridge

Collection Date/Time: 07/27/2022 12:55

Field ID: G5CE0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2344315	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P417340	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P417438	
	SM 2540 D-2011	TSS	2	U	mg/L	P417805	
	SM 4500-F- C-2011	Fluoride	0.069	I	mg F/L	P417951	
2344317	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P417419	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P417369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P417485	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P417450	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P417698	

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: FB

Collection Date/Time: 07/27/2022 13:10

Field ID: FB_07272022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2344318	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P417340	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P417438	
	SM 2540 D-2011	TSS	2	U	mg/L	P417805	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P417951	
2344319	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417419	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P417369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417485	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P417450	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P417698	

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: P417340

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417419

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417368

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417369

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417455

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417485

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417449

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417450

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P417438

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

Reference Method: SM 2320 B-2011
Batch ID: P417533

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

Reference Method: SM 2540 D-2011
Batch ID: P417805

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P417807

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417535

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417951

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417494

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

Reference Method: SM 5310 B-2011
Batch ID: P417698

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: P417340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	91.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417368

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: P417369

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417455

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417485

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417449

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417450

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P417438

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P417533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P417535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P417951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P417698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344317	Ammonia-N	98.2	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344026	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344326	Kjeldahl Nitrogen	109	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344237	Kjeldahl Nitrogen	99.9	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344316	NO2NO3-N	100	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344248	NO2NO3-N	98.2	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344316	Total-P	99.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344358	Total-P	102	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343760	Fluoride	101	98.8	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P417951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344109	Fluoride	99.8	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344316	Organic Carbon	89.8	91.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P417698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344317	Organic Carbon	99.4	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344246	Turbidity	4.88	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344317	Ammonia-N	2.97	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344026	Ammonia-N	0.116	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344326	Kjeldahl Nitrogen	4.44	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344237	Kjeldahl Nitrogen	1.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344316	NO2NO3-N	0.883	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344248	NO2NO3-N	0.375	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344316	Total-P	0.830	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344358	Total-P	0.405	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P417438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344433	Total Alkalinity	0.833	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P417533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343760	Total Alkalinity	0.223	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P417535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343760	Fluoride	1.43	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P417951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344109	Fluoride	0.525	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344316	Organic Carbon	1.20	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P417698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344317	Organic Carbon	0.363	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113772

Included Lab Sample IDs: 2344314, 2344315, 2344318

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113803

Included Lab Sample IDs: 2344316, 2344317, 2344319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.0	97.4	P/P	90 - 110
Ammonia-N	97.9	97.4	P/P	90 - 110
Ammonia-N	99.3	98.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A113811

Included Lab Sample IDs: 2344315, 2344318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113819

Included Lab Sample IDs: 2344316

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113846

Included Lab Sample IDs: 2344317, 2344319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113848

Included Lab Sample IDs: 2344316, 2344317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.3	98.4	P/P	90 - 110
Total-P	99.5	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A113849

Included Lab Sample IDs: 2344316

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	90.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113857

Included Lab Sample IDs: 2344316, 2344317, 2344319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A113862

Included Lab Sample IDs: 2344314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	97.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113862

Included Lab Sample IDs: 2344314

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113876

Included Lab Sample IDs: 2344319

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

Reference Method: SM 5310 B-2011

Run ID: A113927

Included Lab Sample IDs: 2344317, 2344319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	99.9	P/P	90 - 110
Organic Carbon	99.9	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114020

Included Lab Sample IDs: 2344315, 2344318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity	96.7				4.88	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	98.2	103			2.97
	Ammonia-N	91.0	100	99.8			0.116
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	109	104			4.44
	Kjeldahl Nitrogen	105	99.9	102			1.57
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	99.2			0.883
	NO2NO3-N	99.0	98.2	98.6			0.375
EPA 365.1 Rev. 2.0	Total-P	101	99.4	98.4			0.830
	Total-P	101	102	102			0.405
SM 2320 B-2011	Total Alkalinity	100				0.833	
	Total Alkalinity	100				0.223	
SM 4500-F- C-2011	Fluoride	101	101	98.8			1.43
	Fluoride	102	99.8	100			0.525
SM 5310 B-2011	Organic Carbon	99.0	89.8	91.3			1.20
	Organic Carbon	96.3	99.4	100			0.363

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2344314, 2344315, 2344318
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2344316, 2344317, 2344319
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2344316, 2344317, 2344319
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2344316, 2344317, 2344319
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2344316, 2344317, 2344319
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2344314, 2344315, 2344318
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2344314, 2344315, 2344318
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2344314, 2344315, 2344318
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2344316, 2344317, 2344319

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	07/28/2022			07/28/2022 13:48	Khloe J Berg	2344314
	07/28/2022			07/28/2022 13:49	Khloe J Berg	2344315
	07/28/2022			07/28/2022 13:52	Khloe J Berg	2344318
EPA 350.1 Rev. 2.0	07/28/2022			07/29/2022 10:59	Ping Hua	2344317
	07/28/2022			07/29/2022 12:08	Ping Hua	2344316
	07/28/2022			07/29/2022 13:43	Ping Hua	2344319
EPA 351.2 Rev. 2.0	07/28/2022	08/01/2022 14:10	Samantha L Bates	08/02/2022 13:38	Alexandra J Mattheus	2344316
	07/28/2022	08/01/2022 14:10	Samantha L Bates	08/02/2022 14:21	Alexandra J Mattheus	2344317
	07/28/2022	08/01/2022 14:10	Samantha L Bates	08/02/2022 14:22	Alexandra J Mattheus	2344319
EPA 353.2 Rev. 2.0	07/28/2022			08/01/2022 09:55	Beverly Y. Sanders	2344316
	07/28/2022			08/02/2022 08:48	Beverly Y. Sanders	2344317
	07/28/2022			08/02/2022 08:49	Beverly Y. Sanders	2344319
EPA 365.1 Rev. 2.0	07/28/2022	08/01/2022 14:20	Simonne.V. Calhoun	08/02/2022 08:51	Simonne.V. Calhoun	2344316
	07/28/2022	08/01/2022 14:20	Simonne.V. Calhoun	08/02/2022 09:17	Simonne.V. Calhoun	2344317
	07/28/2022	08/01/2022 14:20	Simonne.V. Calhoun	08/02/2022 11:27	James L Waggeberby	2344319
SM 2320 B-2011	07/28/2022			07/30/2022 18:52	Adam P Silver	2344315
	07/28/2022			07/30/2022 19:01	Adam P Silver	2344318
	07/28/2022			08/01/2022 19:24	Adam P Silver	2344314
SM 2540 D-2011	07/28/2022			08/02/2022 15:05	Yijie Li	2344314, 2344315, 2344318
SM 4500-F- C-2011	07/28/2022			08/01/2022 17:19	Adam P Silver	2344314
	07/28/2022			08/10/2022 14:28	Adam P Silver	2344315
	07/28/2022			08/10/2022 14:33	Adam P Silver	2344318
SM 5310 B-2011	07/28/2022			08/02/2022 02:06	Khloe J Berg	2344316
	07/28/2022			08/03/2022 19:58	Khloe J Berg	2344317
	07/28/2022			08/03/2022 23:53	Khloe J Berg	2344319