

Chemical Analysis Report

TLH-ROC-2021-03-25-01

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

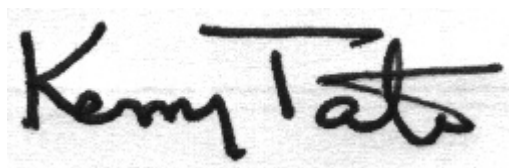
Event Description: **Run 8a**
Request ID: **RQ-2021-03-01-19**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-APR-2021 11:42

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 first name.

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 groups are included in this report: Metals and 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: Apalachicola Bay Center

Collection Date/Time: 03/25/2021 11:05

Field ID: G2TLHR0026

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233788	EPA 180.1 Rev. 2.0	Turbidity	18		NTU	P395496	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P395662	
	SM 2540 D-2011	TSS	14		mg/L	P396075	
	SM 4500 F-C-2011	Fluoride	0.057	I	mg F/L	P395665	
2233789	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P395913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P396062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.66		mg N/L	P395649	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P395730	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P395712	
2233790	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P395494	
2233794	EPA 200.7 Rev. 4.4	Calcium	18.7		mg/L	P395613	
		Iron	1.24E+03		ug/L	P395613	
		Magnesium	2.42		mg/L	P395613	
		Manganese	44.0		ug/L	P395613	
		Zinc	5.0	U	ug/L	P395613	
	EPA 200.8 Rev. 5.4	Aluminum	762		ug/L	P395613	
		Antimony	0.058	I	ug/L	P395613	
		Arsenic	0.50		ug/L	P395613	
		Beryllium	0.051		ug/L	P395613	
		Cadmium	0.020	U	ug/L	P395613	
		Chromium	1.2	I	ug/L	P395613	
		Copper	1.12		ug/L	P395613	
		Lead	0.65		ug/L	P395613	
		Nickel	0.61	I	ug/L	P395613	
		Selenium	0.20	U	ug/L	P395613	
		Silver	0.010	U	ug/L	P395613	
		Thallium	0.10	U	ug/L	P395613	

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: P395496

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395613

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395613

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396062

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395649

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395730

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395494

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

Reference Method: SM 2320 B-2011
Batch ID: P395662

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

Reference Method: SM 2540 D-2011
Batch ID: P396075

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395665

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395712

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	80 - 120
Iron	103		P	80 - 120
Magnesium	102		P	80 - 120
Manganese	101		P	80 - 120
Zinc	90.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.2		P	80 - 120
Antimony	98.1		P	80 - 120
Arsenic	97.8		P	80 - 120
Beryllium	91.3		P	85 - 115
Cadmium	97.7		P	80 - 120
Chromium	94.4		P	80 - 120
Copper	93.6		P	85 - 115
Lead	105		P	85 - 115
Nickel	95.4		P	80 - 120
Selenium	96.0		P	80 - 120
Silver	104		P	85 - 115
Thallium	100		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395913

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395649

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: P395730

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P395662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P395665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P395712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233663	Calcium	103		P	80 - 120
2233663	Iron	105		P	80 - 120
2233663	Magnesium	100		P	80 - 120
2233663	Manganese	104		P	80 - 120
2233663	Zinc	95.0		P	80 - 120
2234403	Calcium	113	109	P/P	80 - 120
2234403	Iron	111	107	P/P	80 - 120
2234403	Magnesium	109	106	P/P	80 - 120
2234403	Manganese	107	103	P/P	80 - 120
2234403	Zinc	98.7	95.4	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233663	Aluminum	96.4		P	80 - 120
2233663	Antimony	100		P	80 - 120
2233663	Arsenic	97.3		P	80 - 120
2233663	Beryllium	89.6		P	80 - 120
2233663	Cadmium	97.7		P	80 - 120
2233663	Chromium	94.7		P	80 - 120
2233663	Copper	92.1		P	80 - 120
2233663	Lead	104		P	80 - 120
2233663	Nickel	93.6		P	80 - 120
2233663	Selenium	94.9		P	80 - 120
2233663	Silver	103		P	80 - 120
2233663	Thallium	103		P	80 - 120
2234403	Aluminum	84.9	95.4	P/P	80 - 120
2234403	Antimony	96.0	98.9	P/P	80 - 120
2234403	Arsenic	96.9	99.1	P/P	80 - 120
2234403	Beryllium	90.2	81.6	P/P	80 - 120
2234403	Cadmium	98.7	99.3	P/P	80 - 120
2234403	Chromium	92.3	95.5	P/P	80 - 120
2234403	Copper	91.6	94.6	P/P	80 - 120
2234403	Lead	102	106	P/P	80 - 120
2234403	Nickel	94.1	97.0	P/P	80 - 120
2234403	Selenium	93.6	96.3	P/P	80 - 120
2234403	Silver	101	105	P/P	80 - 120
2234403	Thallium	101	107	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233710	Ammonia-N	96.4	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233709	Kjeldahl Nitrogen	110	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233535	NO2NO3-N	93.8	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233640	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233790	O-Phosphate-P	99.0	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P395665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233824	Fluoride	97.6	98.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P395712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233610	Organic Carbon	95.4	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P395496

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233708	Turbidity	2.89	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395613

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234403	Calcium	3.29	Spike	P	0 - 20
2234403	Iron	2.78	Spike	P	0 - 20
2234403	Magnesium	2.76	Spike	P	0 - 20
2234403	Manganese	3.05	Spike	P	0 - 20
2234403	Zinc	3.40	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395613

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234403	Aluminum	7.35	Spike	P	0 - 20
2234403	Antimony	2.97	Spike	P	0 - 20
2234403	Arsenic	2.24	Spike	P	0 - 20
2234403	Beryllium	9.57	Spike	P	0 - 20
2234403	Cadmium	0.698	Spike	P	0 - 20
2234403	Chromium	3.43	Spike	P	0 - 20
2234403	Copper	3.13	Spike	P	0 - 20
2234403	Lead	3.66	Spike	P	0 - 20
2234403	Nickel	3.05	Spike	P	0 - 20
2234403	Selenium	2.85	Spike	P	0 - 20
2234403	Silver	4.17	Spike	P	0 - 20
2234403	Thallium	5.67	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395913

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233710	Ammonia-N	0.950	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396062

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233709	Kjeldahl Nitrogen	5.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395649

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233535	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395730

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233640	Total-P	0.0165	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395494

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233790	O-Phosphate-P	0.910	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P395662

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233824	Total Alkalinity	0.962	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011

Batch ID: P395665

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233824	Fluoride	0.469	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011

Batch ID: P395712

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233610	Organic Carbon	1.27	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: A104273

Included Lab Sample IDs: 2233790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104275

Included Lab Sample IDs: 2233788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104356

Included Lab Sample IDs: 2233789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A104360

Included Lab Sample IDs: 2233788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104360

Included Lab Sample IDs: 2233788

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104377

Included Lab Sample IDs: 2233794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	98.0	99.3	P/P	90 - 110
Arsenic	100	98.3	P/P	90 - 110
Cadmium	99.1	100	P/P	90 - 110
Chromium	97.8	99.0	P/P	90 - 110
Nickel	98.4	97.5	P/P	90 - 110
Selenium	99.2	97.5	P/P	90 - 110
Thallium	103	103	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104385

Included Lab Sample IDs: 2233789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104404

Included Lab Sample IDs: 2233794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.2	92.4	P/P	90 - 110
Lead	109	108	P/P	90 - 110
Silver	102	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104409

Included Lab Sample IDs: 2233794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	100	P/P	90 - 110
Iron	100	101	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Zinc	90.7	91.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104434

Included Lab Sample IDs: 2233794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	94.7	93.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104454

Included Lab Sample IDs: 2233789

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104465

Included Lab Sample IDs: 2233789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104575

Included Lab Sample IDs: 2233789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	104	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.89	
EPA 200.7 Rev. 4.4	Calcium	106	103	113	109			3.29
	Iron	103	105	111	107			2.78
	Magnesium	102	100	109	106			2.76
	Manganese	101	104	107	103			3.05
	Zinc	90.9	95.0	98.7	95.4			3.40
EPA 200.8 Rev. 5.4	Aluminum	95.2	84.9	95.4	96.4			7.35
	Antimony	98.1	96.0	98.9	100			2.97
	Arsenic	97.8	96.9	99.1	97.3			2.24
	Beryllium	91.3	90.2	81.6	89.6			9.57
	Cadmium	97.7	98.7	99.3	97.7			0.698
	Chromium	94.4	92.3	95.5	94.7			3.43
	Copper	93.6	91.6	94.6	92.1			3.13
	Lead	105	102	106	104			3.66
	Nickel	95.4	94.1	97.0	93.6			3.05
	Selenium	96.0	93.6	96.3	94.9			2.85
	Silver	104	101	105	103			4.17
	Thallium	100	101	107	103			5.67
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	96.4	97.4				0.950
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	110	100				5.90
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	93.8	94.2				0.491
EPA 365.1 Rev. 2.0	Total-P	108	101	101				0.0165
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	99.0	100				0.910
SM 2320 B-2011	Total Alkalinity	101					0.962	
SM 4500 F-C-2011	Fluoride	99.4	97.6	98.2				0.469
SM 5310 B-2011	Organic Carbon	95.4	95.4	97.4				1.27

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2233788
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2233794
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2233794
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2233789
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2233789
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2233789
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2233789
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2233790
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2233788
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2233788
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2233788
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2233789

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	03/25/2021			03/25/2021 16:43	Yen Ta	2233788
EPA 200.7 Rev. 4.4	03/25/2021	03/29/2021 15:05	Elliott D. Healy	04/01/2021 00:01	Betina Topolski	2233794
EPA 200.8 Rev. 5.4	03/25/2021	03/29/2021 15:05	Elliott D. Healy	03/30/2021 20:24	McKinley C Carter	2233794
	03/25/2021	03/29/2021 15:05	Elliott D. Healy	03/31/2021 16:44	McKinley C Carter	2233794
	03/25/2021	03/29/2021 15:05	Elliott D. Healy	04/01/2021 13:59	Alexander Thompson	2233794
EPA 350.1 Rev. 2.0	03/25/2021			04/03/2021 11:42	Ping Hua	2233789
EPA 351.2 Rev. 2.0	03/25/2021	04/07/2021 13:05	Benjamin T. Nordmann	04/08/2021 11:04	Virginia P. Brown	2233789
EPA 353.2 Rev. 2.0	03/25/2021			03/30/2021 09:53	Beverly Y. Sanders	2233789
EPA 365.1 Rev. 2.0	03/25/2021	03/31/2021 13:21	Yen Ta	04/02/2021 13:24	Shengyu Ding	2233789
EPA 365.1 Rev. 2.0 dissolved	03/25/2021			03/25/2021 15:52	Blanca Fach	2233790
SM 2320 B-2011	03/25/2021			03/26/2021 21:28	Dale L. Simmons	2233788
SM 2540 D-2011	03/25/2021			03/30/2021 14:36	Yijie Li	2233788
SM 4500 F-C-2011	03/25/2021			03/26/2021 21:28	Dale L. Simmons	2233788
SM 5310 B-2011	03/25/2021			03/31/2021 05:06	Madeline Gruver	2233789