

Chemical Analysis Report

TLH-ROC-2021-06-29-01

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

Event Description: **Run 7**
Request ID: **RQ-2021-06-21-42**
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: 21-JUL-2021 15:26

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, sweeping underline.

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: Gully Branch 80m north of Gully Branch Rd

Collection Date/Time: 06/29/2021 09:55

Field ID: G2TLHR0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257753	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P400431	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P400655	
		Sulfate	0.23	I	mg SO4/L	P400656	
		Color (true)	590		PCU	P400423	
	SM 2120 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400707	
	SM 2540 D-2011	TSS	2	I	mg/L	P400673	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400710	
2257754	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P400874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P400587	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400369	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P400525	
	SM 5310 B-2011	Organic Carbon	48		mg C/L	P400568	
2257755	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400348	
2257773	EPA 200.7 Rev. 4.4	Barium	6.7		ug/L	P400573	
		Calcium	2.23		mg/L	P400573	
		Iron	2.32E+03		ug/L	P400573	
		Magnesium	0.42		mg/L	P400573	
		Manganese	5.9		ug/L	P400573	
		Potassium	0.30	U	mg/L	P400573	
		Sodium	2.0	I	mg/L	P400573	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P400573	
		Aluminum	972		ug/L	P400573	
		Antimony	0.050	U	ug/L	P400573	
		Arsenic	0.37		ug/L	P400573	
		Beryllium	0.032	I	ug/L	P400573	
		Boron**	15.2		ug/L	P400573	
		Cadmium	0.022	I	ug/L	P400573	
		Chromium	0.94	I	ug/L	P400573	
		Copper	0.40	U	ug/L	P400573	
		Lead	0.71		ug/L	P400573	
		Nickel	0.66	I	ug/L	P400573	
		Selenium	0.25	I	ug/L	P400573	
		Silver	0.010	U	ug/L	P400573	
		Thallium	0.10	U	ug/L	P400573	
		Hardness	7.3		mg/L	P400573	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/08/2021.

Sample Location: Alligator Harbor near clam beds

Collection Date/Time: 06/29/2021 11:10

Field ID: G2TLHR0025

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257738	EPA 180.1 Rev. 2.0	Turbidity	8.4	A	NTU	P400431	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P400708	
	SM 2540 D-2011	TSS	20		mg/L	P400674	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P400711	
2257741	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P400571	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P400519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400385	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P400526	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P400569	
2257744	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400349	

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: Oyster Bay2

Collection Date/Time: 06/29/2021 12:00

Field ID: G1TLHR0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257739	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P400431	
	SM 2320 B-2011	Total Alkalinity	110		mg CaCO3/L	P400708	
	SM 2540 D-2011	TSS	12		mg/L	P400674	
	SM 4500 F-C-2011	Fluoride	0.98		mg F/L	P400711	
2257742	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P400571	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P400519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400385	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P400526	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P400569	
2257745	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400349	

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: Oyster Bay1

Collection Date/Time: 06/29/2021 12:15

Field ID: G1TLHR0151

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257740	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P400431	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P400708	
	SM 2540 D-2011	TSS	8	I	mg/L	P400674	
	SM 4500 F-C-2011	Fluoride	0.92		mg F/L	P400711	
2257743	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P400571	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P400519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P400385	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P400526	
	SM 5310 B-2011	Organic Carbon	5.2		mg C/L	P400569	
2257746	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P400349	

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: Spring Creek Springs Middle

Collection Date/Time: 06/29/2021 12:25

Field ID: G1TLHR0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257747	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P400431	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P400708	
	SM 2540 D-2011	TSS	3	U	mg/L	P400674	
	SM 4500 F-C-2011	Fluoride	0.82		mg F/L	P400711	
2257749	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P400571	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P400637	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P400385	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P400526	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P400569	
2257751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P400349	

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: Spring Creek Spring

Collection Date/Time: 06/29/2021 12:40

Field ID: G1TLHR0131

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257748	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P400431	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P400708	
	SM 2540 D-2011	TSS	3	UA	mg/L	P400674	
	SM 4500 F-C-2011	Fluoride	0.80		mg F/L	P400711	
2257750	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P400873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P400637	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P400385	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P400526	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P400569	
2257752	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P400349	

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: P400431

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400573

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400573

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
Boron	2.0	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 300.0 Rev. 2.1
Batch ID: P400655

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400656

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400571

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400874

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400519

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400587

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400637

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400369

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400385

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400525

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400526

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: P400348

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400349

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

Reference Method: SM 2120 B-2011
Batch ID: P400423

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P400707

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

Reference Method: SM 2320 B-2011
Batch ID: P400708

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

Reference Method: SM 2540 D-2011
Batch ID: P400673

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400674

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400710

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400711

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: P400568

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

Reference Method: SM 5310 B-2011
Batch ID: P400569

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: P400573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.2		P	85 - 115
Calcium	99.1		P	85 - 115
Iron	95.6		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	99.7		P	85 - 115
Potassium	104		P	85 - 115
Sodium	92.1		P	85 - 115
Zinc	90.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	108		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	105		P	85 - 115
Beryllium	105		P	85 - 115
Boron	113		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	102		P	85 - 115
Copper	102		P	85 - 115
Lead	103		P	85 - 115
Nickel	103		P	85 - 115
Selenium	104		P	85 - 115
Silver	100		P	85 - 115
Thallium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400655

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400571

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400874

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400519

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400587

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400637

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: P400369

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: P400385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400525

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400526

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400348

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400349

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

Reference Method: SM 2120 B-2011
Batch ID: P400423

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P400707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P400708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P400710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P400711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400568

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P400569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P400573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257773	Barium	97.2		P	80 - 120
2257773	Calcium	105		P	80 - 120
2257773	Iron	90.4		P	80 - 120
2257773	Magnesium	101		P	80 - 120
2257773	Manganese	97.3		P	80 - 120
2257773	Potassium	108		P	80 - 120
2257773	Sodium	94.7		P	80 - 120
2257773	Zinc	88.7		P	80 - 120
2258458	Barium	100	98.9	P/P	80 - 120
2258458	Calcium	100		P	80 - 120
2258458	Iron	115	109	P/P	80 - 120
2258458	Magnesium	98.0	102	P/P	80 - 120
2258458	Manganese	99.9	98.9	P/P	80 - 120
2258458	Potassium	104	103	P/P	80 - 120
2258458	Sodium	97.7		P	80 - 120
2258458	Zinc	91.9	90.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P400573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257773	Aluminum	114		P	80 - 120
2257773	Antimony	108		P	80 - 120
2257773	Arsenic	105		P	80 - 120
2257773	Beryllium	104		P	80 - 120
2257773	Boron	113		P	80 - 120
2257773	Cadmium	103		P	80 - 120
2257773	Chromium	102		P	80 - 120
2257773	Copper	105		P	80 - 120
2257773	Lead	104		P	80 - 120
2257773	Nickel	104		P	80 - 120
2257773	Selenium	105		P	80 - 120
2257773	Silver	102		P	80 - 120
2257773	Thallium	111		P	80 - 120
2258458	Aluminum	108	109	P/P	80 - 120
2258458	Antimony	107	108	P/P	80 - 120
2258458	Arsenic	105	106	P/P	80 - 120
2258458	Beryllium	102	105	P/P	80 - 120
2258458	Boron	115	115	P/P	80 - 120
2258458	Cadmium	102	105	P/P	80 - 120
2258458	Chromium	100	101	P/P	80 - 120
2258458	Copper	104	105	P/P	80 - 120
2258458	Lead	105	105	P/P	80 - 120
2258458	Nickel	103	104	P/P	80 - 120
2258458	Selenium	103	102	P/P	80 - 120
2258458	Silver	100	101	P/P	80 - 120
2258458	Thallium	112	111	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P400655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257613	Chloride	95.4		P	90 - 110
2258001	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257613	Sulfate	92.6		P	90 - 110
2258001	Sulfate	93.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259550	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257750	Ammonia-N	98.4	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257754	Ammonia-N	94.6	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257309	Kjeldahl Nitrogen	97.5	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257595	Kjeldahl Nitrogen	108	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257749	Kjeldahl Nitrogen	99.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257587	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257741	NO2NO3-N	98.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257749	Total-P	96.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257574	O-Phosphate-P	96.6	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257744	O-Phosphate-P	93.8	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P400710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257941	Fluoride	95.0	97.3	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P400711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257978	Fluoride	98.2	99.9	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P400568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257786	Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P400569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257743	Organic Carbon	95.9	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P400431

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257738	Turbidity	1.68	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P400573

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258458	Barium	1.18	Spike	P	0 - 20
2258458	Calcium	0.163	Spike	P	0 - 20
2258458	Iron	5.17	Spike	P	0 - 20
2258458	Magnesium	2.20	Spike	P	0 - 20
2258458	Manganese	0.958	Spike	P	0 - 20
2258458	Potassium	0.704	Spike	P	0 - 20
2258458	Sodium	2.84	Spike	P	0 - 20
2258458	Zinc	1.21	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P400573

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258458	Aluminum	0.725	Spike	P	0 - 20
2258458	Antimony	0.714	Spike	P	0 - 20
2258458	Arsenic	0.265	Spike	P	0 - 20
2258458	Beryllium	2.82	Spike	P	0 - 20
2258458	Boron	0.190	Spike	P	0 - 20
2258458	Cadmium	2.19	Spike	P	0 - 20
2258458	Chromium	0.976	Spike	P	0 - 20
2258458	Copper	0.924	Spike	P	0 - 20
2258458	Lead	0.310	Spike	P	0 - 20
2258458	Nickel	0.583	Spike	P	0 - 20
2258458	Selenium	0.683	Spike	P	0 - 20
2258458	Silver	0.631	Spike	P	0 - 20
2258458	Thallium	0.784	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P400655

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257613	Chloride	1.54	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P400656

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257613	Sulfate	1.51	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259550	Ammonia-N	1.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257750	Ammonia-N	0.751	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258433	Ammonia-N	0.694	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257309	Kjeldahl Nitrogen	7.73	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257595	Kjeldahl Nitrogen	2.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257749	Kjeldahl Nitrogen	1.08	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257587	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257741	NO2NO3-N	1.54	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400525

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257791	Total-P	0.0718	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400526

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257749	Total-P	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400348

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257574	O-Phosphate-P	0.500	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400349

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257744	O-Phosphate-P	2.53	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P400423

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257817	Color (true)	1.39	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P400707

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257941	Total Alkalinity	0.884	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011

Batch ID: P400708

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257978	Total Alkalinity	0.342	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P400710

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257941	Fluoride	0.457	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P400711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257978	Fluoride	0.915	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P400568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257786	Organic Carbon	0.0481	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P400569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257743	Organic Carbon	0.504	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: A106351

Included Lab Sample IDs: 2257744, 2257745, 2257746, 2257751, 2257752, 2257755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.7	P/P	90 - 110
O-Phosphate-P	99.7	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106362

Included Lab Sample IDs: 2257754

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106367

Included Lab Sample IDs: 2257741, 2257742, 2257743, 2257749, 2257750

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

Reference Method: SM 2120 B-2011

Run ID: A106379

Included Lab Sample IDs: 2257753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106383

Included Lab Sample IDs: 2257738, 2257739, 2257740, 2257747, 2257748, 2257753

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

Reference Method: SM 5310 B-2011

Run ID: A106454

Included Lab Sample IDs: 2257741, 2257742, 2257743, 2257749, 2257750, 2257754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.1	P/P	90 - 110
Organic Carbon	97.1	97.6	P/P	90 - 110
Organic Carbon	97.4	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106456

Included Lab Sample IDs: 2257741, 2257742, 2257743, 2257749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106459

Included Lab Sample IDs: 2257741, 2257742, 2257743, 2257749, 2257750, 2257754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.2	P/P	90 - 110
Total-P	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106466

Included Lab Sample IDs: 2257741, 2257742, 2257743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	94.2	P/P	90 - 110
Kjeldahl Nitrogen	97.3	95.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106481

Included Lab Sample IDs: 2257753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	98.5	P/P	90 - 110
Sulfate	98.6	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106491

Included Lab Sample IDs: 2257754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	94.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106493

Included Lab Sample IDs: 2257773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	103	P/P	90 - 110
Antimony	105	105	P/P	90 - 110
Arsenic	102	100	P/P	90 - 110
Beryllium	95.7	96.5	P/P	90 - 110
Boron	104	105	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	98.9	99.8	P/P	90 - 110
Copper	102	99.5	P/P	90 - 110
Lead	98.9	98.8	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	100	100	P/P	90 - 110
Silver	99.5	98.7	P/P	90 - 110
Thallium	99.4	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106504

Included Lab Sample IDs: 2257749, 2257750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A106513

Included Lab Sample IDs: 2257738, 2257739, 2257740, 2257747, 2257748, 2257753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	101	P/P	90 - 110
Total Alkalinity	103	99.4	P/P	90 - 110
Total Alkalinity	99.4	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106513

Included Lab Sample IDs: 2257738, 2257739, 2257740, 2257747, 2257748, 2257753

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106543

Included Lab Sample IDs: 2257773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.6	98.4	P/P	90 - 110
Calcium	101	99.5	P/P	90 - 110
Iron	94.9	96.2	P/P	90 - 110
Magnesium	97.9	97.1	P/P	90 - 110
Manganese	101	99.6	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	96.6	98.5	P/P	90 - 110
Zinc	96.5	92.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106584

Included Lab Sample IDs: 2257750, 2257754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	100	P/P	90 - 110
Ammonia-N	99.0	99.0	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.68	
EPA 200.7 Rev. 4.4	Barium	99.2	97.2	100	98.9			1.18
	Calcium	99.1	105	100				0.163
	Iron	95.6	90.4	115	109			5.17
	Magnesium	102	101	98.0	102			2.20
	Manganese	99.7	97.3	99.9	98.9			0.958
	Potassium	104	108	104	103			0.704
	Sodium	92.1	94.7	97.7				2.84
	Zinc	90.2	88.7	91.9	90.8			1.21
EPA 200.8 Rev. 5.4	Aluminum	108	114	108	109			0.725
	Antimony	108	108	107	108			0.714
	Arsenic	105	105	105	106			0.265
	Beryllium	105	104	102	105			2.82
	Boron	113	113	115	115			0.190
	Cadmium	102	103	102	105			2.19
	Chromium	102	102	100	101			0.976
	Copper	102	105	104	105			0.924
	Lead	103	104	105	105			0.310
	Nickel	103	104	103	104			0.583
	Selenium	104	105	103	102			0.683
	Silver	100	102	100	101			0.631
	Thallium	107	111	112	111			0.784
EPA 300.0 Rev. 2.1	Chloride	96.7	95.4	98.2			1.54	
	Sulfate	97.3	92.6	93.0			1.51	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	102	101				1.43
	Ammonia-N	98.6	98.4	97.4				0.751
	Ammonia-N	99.2	94.6	94.2				0.694
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	97.5	108				7.73
	Kjeldahl Nitrogen	105	108	103				2.70
	Kjeldahl Nitrogen	101	99.5	101				1.08
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102				0.0
	NO2NO3-N	97.5	98.0	96.5				1.54
EPA 365.1 Rev. 2.0	Total-P	105						0.0718
	Total-P	101	96.0	96.5				0.519
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	96.6	97.2				0.500
	O-Phosphate-P	99.0	93.8	96.2				2.53
SM 2120 B-2011	Color (true)	100					1.39	
SM 2320 B-2011	Total Alkalinity	103					0.884	
	Total Alkalinity	103					0.342	
SM 4500 F-C-2011	Fluoride	99.9	95.0	97.3				0.457
	Fluoride	99.9	98.2	99.9				0.915
SM 5310 B-2011	Organic Carbon	97.1	101					0.0481
	Organic Carbon	96.8	95.9	96.4				0.504

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2257773
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2257773

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2257753
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2257753
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2257741, 2257742, 2257743, 2257749, 2257750, 2257754
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2257741, 2257742, 2257743, 2257749, 2257750, 2257754
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2257741, 2257742, 2257743, 2257749, 2257750, 2257754
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2257741, 2257742, 2257743, 2257749, 2257750, 2257754
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2257744, 2257745, 2257746, 2257751, 2257752, 2257755
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2257753
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2257773
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2257741, 2257742, 2257743, 2257749, 2257750, 2257754

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	06/29/2021			06/30/2021 16:33	Sarah A Nixon	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
EPA 200.7 Rev. 4.4	06/29/2021	07/06/2021 13:45	Elliott D. Healy	07/09/2021 13:14	Betina Topolski	2257773
EPA 200.8 Rev. 5.4	06/29/2021	07/06/2021 13:45	Elliott D. Healy	07/07/2021 15:09	Alexander Thompson	2257773
EPA 300.0 Rev. 2.1	06/29/2021			07/07/2021 16:41	Lipi Saha	2257753
EPA 350.1 Rev. 2.0	06/29/2021			07/06/2021 11:50	Roberta Tatti	2257741
	06/29/2021			07/06/2021 11:51	Roberta Tatti	2257742
	06/29/2021			07/06/2021 11:53	Roberta Tatti	2257743
	06/29/2021			07/06/2021 11:54	Roberta Tatti	2257749
	06/29/2021			07/13/2021 12:52	Roberta Tatti	2257750
	06/29/2021			07/13/2021 13:23	Roberta Tatti	2257754
EPA 351.2 Rev. 2.0	06/29/2021	07/02/2021 12:58	Benjamin T. Nordmann	07/06/2021 13:46	Letuzia M De Oliveira	2257741
	06/29/2021	07/02/2021 12:58	Benjamin T. Nordmann	07/06/2021 13:48	Letuzia M De Oliveira	2257742
	06/29/2021	07/02/2021 12:58	Benjamin T. Nordmann	07/06/2021 13:53	Letuzia M De Oliveira	2257743
	06/29/2021	07/06/2021 14:20	Benjamin T. Nordmann	07/07/2021 13:52	Letuzia M De Oliveira	2257754
	06/29/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 11:47	Letuzia M De Oliveira	2257749
	06/29/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 11:52	Letuzia M De Oliveira	2257750
EPA 353.2 Rev. 2.0	06/29/2021			06/30/2021 09:26	Beverly Y. Sanders	2257754
	06/29/2021			06/30/2021 11:15	Beverly Y. Sanders	2257741
	06/29/2021			06/30/2021 11:21	Beverly Y. Sanders	2257742
	06/29/2021			06/30/2021 11:22	Beverly Y. Sanders	2257743
	06/29/2021			06/30/2021 11:23	Beverly Y. Sanders	2257749
	06/29/2021			06/30/2021 11:24	Beverly Y. Sanders	2257750
EPA 365.1 Rev. 2.0	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:09	Shengyu Ding	2257754
	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:20	Shengyu Ding	2257741
	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:21	Shengyu Ding	2257742
	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:22	Shengyu Ding	2257743
	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:23	Shengyu Ding	2257749
	06/29/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:24	Shengyu Ding	2257750
EPA 365.1 Rev. 2.0 dissolved	06/29/2021			06/29/2021 15:42	Ping Hua	2257755
	06/29/2021			06/29/2021 15:45	Ping Hua	2257744
	06/29/2021			06/29/2021 15:48	Ping Hua	2257745, 2257746
	06/29/2021			06/29/2021 15:49	Ping Hua	2257751
	06/29/2021			06/29/2021 15:54	Ping Hua	2257752
SM 2120 B-2011	06/29/2021			06/30/2021 17:33	Sarah A Nixon	2257753
SM 2320 B-2011	06/29/2021			07/08/2021 23:36	Dale L. Simmons	2257753
	06/29/2021			07/09/2021 05:01	Dale L. Simmons	2257738
	06/29/2021			07/09/2021 05:15	Dale L. Simmons	2257739
	06/29/2021			07/09/2021 05:29	Dale L. Simmons	2257740
	06/29/2021			07/09/2021 06:26	Dale L. Simmons	2257747

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	06/29/2021			07/09/2021 06:41	Dale L. Simmons	2257748
SM 2340B	06/29/2021			07/09/2021 13:14	Betina Topolski	2257773
SM 2540 D-2011	06/29/2021			07/01/2021 15:22	Yijie Li	2257738, 2257739, 2257740, 2257747, 2257748, 2257753
SM 4500 F-C-2011	06/29/2021			07/08/2021 23:36	Dale L. Simmons	2257753
	06/29/2021			07/09/2021 03:59	Dale L. Simmons	2257738
	06/29/2021			07/09/2021 04:05	Dale L. Simmons	2257739
	06/29/2021			07/09/2021 04:10	Dale L. Simmons	2257740
	06/29/2021			07/09/2021 04:15	Dale L. Simmons	2257747
SM 5310 B-2011	06/29/2021			07/09/2021 04:20	Dale L. Simmons	2257748
	06/29/2021			07/03/2021 03:23	Madeline Gruver	2257754
	06/29/2021			07/03/2021 08:44	Madeline Gruver	2257743
	06/29/2021			07/03/2021 09:23	Madeline Gruver	2257741
	06/29/2021			07/03/2021 09:36	Madeline Gruver	2257742
	06/29/2021			07/03/2021 10:04	Madeline Gruver	2257749
	06/29/2021			07/03/2021 10:44	Madeline Gruver	2257750