

Chemical Analysis Report

TLH-ROC-2022-09-08-01

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

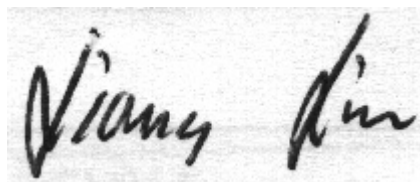
Event Description: **Run 10**
Request ID: **RQ-2022-08-01-28**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-SEP-2022 16:23

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 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 River @ Bristol Landing

Collection Date/Time: 09/08/2022 09:30

Field ID: G2TLHR0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355232	DEP SOP: NU-094-1	Color (true)	14		PCU	P419381	
	EPA 180.1 Rev. 2.0	Turbidity	4.2	A	NTU	P419378	
	EPA 300.0 Rev. 2.1	Chloride	5.7		mg Cl/L	P419774	
		Sulfate	8.4		mg SO4/L	P419778	
	SM 2320 B-2011	Total Alkalinity	41		mg CaCO3/L	P419767	
	SM 2540 C-2011	TDS	76		mg/L	P419798	
	SM 2540 D-2011	TSS	5	I	mg/L	P419816	
	SM 4500-F- C-2011	Fluoride	0.078	I	mg F/L	P419771	
2355234	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P419629	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P419519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P419894	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P419537	
	SM 5310 B-2011	Organic Carbon	3.1		mg C/L	P419560	
2355245	EPA 200.7 Rev. 4.4	Calcium	13.0		mg/L	P419409	
		Iron	150		ug/L	P419409	
		Magnesium	2.10		mg/L	P419409	
		Potassium	2.1		mg/L	P419409	
		Sodium	8.0		mg/L	P419409	
		Strontium	34.4		ug/L	P419409	
		Tin	3.4	I	ug/L	P419409	
		Titanium	1.6	I	ug/L	P419409	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P419409	
		Zinc	5.0	U	ug/L	P419409	
		Aluminum	60		ug/L	P419671	
		Antimony	0.080	I	ug/L	P419409	
		Arsenic	0.53		ug/L	P419409	
		Barium	19.9		ug/L	P419409	
		Beryllium	0.012	I	ug/L	P419409	
		Boron	17.8		ug/L	P419409	
		Cadmium	0.020	U	ug/L	P419409	
		Chromium	0.40	U	ug/L	P419409	
		Cobalt	0.080		ug/L	P419409	
		Copper	0.45	I	ug/L	P419409	
		Lead	0.20	U	ug/L	P419409	
		Manganese	69.9		ug/L	P419409	
		Molybdenum	0.43	I	ug/L	P419409	
		Nickel	0.50	U	ug/L	P419409	
		Selenium	0.20	U	ug/L	P419409	
		Silver	0.010	U	ug/L	P419409	
		Thallium	0.10	U	ug/L	P419409	
	SM 2340 B-2011	Hardness	41.1		mg/L	P419409	

Ref. Method and Comment:

SM 2540 D-2011: 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.

Sample Location: FB

Collection Date/Time: 09/08/2022 09:40

Field ID: FB_09082022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355238	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P419381	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P419378	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P419774	
		Sulfate	0.20	U	mg SO4/L	P419778	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P419767	
	SM 2540 C-2011	TDS	15	U	mg/L	P419798	
	SM 2540 D-2011	TSS	2	U	mg/L	P419816	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P419771	
2355239	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P419629	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P419519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P419894	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P419538	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P419756	
2355249	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P419409	
		Iron	30	U	ug/L	P419409	
		Magnesium	0.040	U	mg/L	P419409	
		Potassium	0.30	U	mg/L	P419409	
		Sodium	0.50	U	mg/L	P419409	
		Strontium	2.0	U	ug/L	P419409	
		Tin	3.0	U	ug/L	P419409	
		Titanium	0.75	U	ug/L	P419409	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P419409	
		Zinc	5.0	U	ug/L	P419409	
		Aluminum	5.0	U	ug/L	P419671	
		Antimony	0.050	U	ug/L	P419409	
		Arsenic	0.050	U	ug/L	P419409	
		Barium	0.20	U	ug/L	P419409	
		Beryllium	0.010	U	ug/L	P419409	
		Boron	2.0	U	ug/L	P419409	
		Cadmium	0.020	U	ug/L	P419409	
		Chromium	0.40	U	ug/L	P419409	
		Cobalt	0.020	U	ug/L	P419409	
		Copper	0.40	U	ug/L	P419409	
		Lead	0.20	U	ug/L	P419409	
		Manganese	0.10	U	ug/L	P419409	
		Molybdenum	0.15	U	ug/L	P419409	
		Nickel	0.50	U	ug/L	P419409	
		Selenium	0.20	U	ug/L	P419409	
		Silver	0.010	U	ug/L	P419409	
		Thallium	0.10	U	ug/L	P419409	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P419409	

Ref. Method and Comment:

SM 2540 D-2011: 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.

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

Sample Location: Apalachicola River 500m from Lola Landing Boat Ramp

Collection Date/Time: 09/08/2022 10:40

Field ID: G2TLHR0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355233	DEP SOP: NU-094-1	Color (true)	19		PCU	P419381	
	EPA 180.1 Rev. 2.0	Turbidity	7.0		NTU	P419378	
	EPA 300.0 Rev. 2.1	Chloride	5.6	A	mg Cl/L	P419774	
		Sulfate	6.5	A	mg SO4/L	P419778	
	SM 2320 B-2011	Total Alkalinity	46		mg CaCO3/L	P419767	
	SM 2540 C-2011	TDS	75		mg/L	P419798	
	SM 2540 D-2011	TSS	10		mg/L	P419816	
	SM 4500-F- C-2011	Fluoride	0.070	I	mg F/L	P419771	
2355235	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P419629	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P419519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P419894	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P419537	
	SM 5310 B-2011	Organic Carbon	3.3		mg C/L	P419560	
2355246	EPA 200.7 Rev. 4.4	Calcium	15.7		mg/L	P419409	
		Iron	280		ug/L	P419409	
		Magnesium	2.01		mg/L	P419409	
		Potassium	1.9		mg/L	P419409	
		Sodium	7.0		mg/L	P419409	
		Strontium	34.9		ug/L	P419409	
		Tin	3.2	I	ug/L	P419409	
		Titanium	1.9	I	ug/L	P419409	
		Vanadium	2.0	U	ug/L	P419409	
		Zinc	5.0	U	ug/L	P419409	
	EPA 200.8 Rev. 5.4	Aluminum	165		ug/L	P419671	
		Antimony	0.066	I	ug/L	P419409	
		Arsenic	0.48		ug/L	P419409	
		Barium	21.4		ug/L	P419409	
		Beryllium	0.022	I	ug/L	P419409	
		Boron	15.9		ug/L	P419409	
		Cadmium	0.020	U	ug/L	P419409	
		Chromium	0.40	U	ug/L	P419409	
		Cobalt	0.142		ug/L	P419409	
		Copper	0.49	I	ug/L	P419409	
		Lead	0.20	U	ug/L	P419409	
		Manganese	83.7		ug/L	P419409	
		Molybdenum	0.35	I	ug/L	P419409	
		Nickel	0.50	U	ug/L	P419409	
		Selenium	0.20	U	ug/L	P419409	
		Silver	0.010	U	ug/L	P419409	
		Thallium	0.10	U	ug/L	P419409	
		Hardness	47.5		mg/L	P419409	

Ref. Method and Comment:

SM 2540 D-2011: 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.

Sample Location: Stone Mill Creek Upstream S Dianna St

Collection Date/Time: 09/08/2022 11:25

Field ID: G2TLHR0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355236	DEP SOP: NU-094-1	Color (true)	200		PCU	P419385	
	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P419378	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P419774	
		Sulfate	1.0		mg SO4/L	P419778	
	SM 2320 B-2011	Total Alkalinity	3.6		mg CaCO3/L	P419767	
	SM 2540 C-2011	TDS	55		mg/L	P419798	
	SM 2540 D-2011	TSS	8	I	mg/L	P419816	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P419771	
2355237	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P419629	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P419520	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P419894	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P419537	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P419560	
2355247	EPA 200.7 Rev. 4.4	Calcium	3.17		mg/L	P419409	
		Iron	1.0E+03		ug/L	P419409	
		Magnesium	0.65		mg/L	P419409	
		Potassium	0.34	I	mg/L	P419409	
		Sodium	2.0		mg/L	P419409	
		Strontium	91.9		ug/L	P419409	
		Tin	3.0	U	ug/L	P419409	
		Titanium	1.3	I	ug/L	P419409	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P419409	
		Zinc	5.0	U	ug/L	P419409	
		Aluminum	406		ug/L	P419671	
		Antimony	0.050	U	ug/L	P419409	
		Arsenic	0.30		ug/L	P419409	
		Barium	10.9		ug/L	P419409	
		Beryllium	0.028	I	ug/L	P419409	
		Boron	11.5		ug/L	P419409	
		Cadmium	0.020	U	ug/L	P419409	
		Chromium	0.69	I	ug/L	P419409	
		Cobalt	0.211		ug/L	P419409	
		Copper	0.40	U	ug/L	P419409	
		Lead	0.49		ug/L	P419409	
		Manganese	12.8		ug/L	P419409	
		Molybdenum	0.15	U	ug/L	P419409	
		Nickel	0.67	I	ug/L	P419409	
		Selenium	0.20	U	ug/L	P419409	
		Silver	0.010	U	ug/L	P419409	
		Thallium	0.10	U	ug/L	P419409	
	SM 2340 B-2011	Hardness	10.6		mg/L	P419409	

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: DEP SOP: NU-094-1
Batch ID: P419381

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P419385

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419378

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419409

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419409

Component	Result	Code	Units
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419671

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419774

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419778

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419629

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419519

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419520

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419894

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419537

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419538

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: P419767

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

Reference Method: SM 2540 C-2011
Batch ID: P419798

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419816

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419771

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419560

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

Reference Method: SM 5310 B-2011
Batch ID: P419756

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P419381

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P419385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419378

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	106		P	85 - 115
Sodium	105		P	85 - 115
Strontium	103		P	85 - 115
Tin	107		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	102		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	100		P	85 - 115
Boron	101		P	85 - 115
Cadmium	98.8		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	96.5		P	85 - 115
Copper	99.4		P	85 - 115
Lead	91.8		P	85 - 115
Manganese	98.9		P	85 - 115
Molybdenum	97.6		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Silver	88.3		P	85 - 115
Thallium	97.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419774

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419778

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419519

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: P419520

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: P419894

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: P419537

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419538

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P419767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P419771

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

Reference Method: SM 5310 B-2011
Batch ID: P419560

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

Reference Method: SM 5310 B-2011
Batch ID: P419756

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P419409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355246	Calcium	109	85.0	P/P	80 - 120
2355246	Iron	108	106	P/P	80 - 120
2355246	Magnesium	107	102	P/P	80 - 120
2355246	Potassium	106	102	P/P	80 - 120
2355246	Sodium	102		P	80 - 120
2355246	Strontium	103	101	P/P	80 - 120
2355246	Tin	107	104	P/P	80 - 120
2355246	Titanium	105	102	P/P	80 - 120
2355246	Vanadium	104	100	P/P	80 - 120
2355246	Zinc	101	98.9	P/P	80 - 120
2355260	Calcium	107		P	80 - 120
2355260	Iron	107		P	80 - 120
2355260	Magnesium	108		P	80 - 120
2355260	Potassium	108		P	80 - 120
2355260	Sodium	104		P	80 - 120
2355260	Strontium	103		P	80 - 120
2355260	Tin	106		P	80 - 120
2355260	Titanium	102		P	80 - 120
2355260	Vanadium	101		P	80 - 120
2355260	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P419409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355246	Antimony	104	102	P/P	80 - 120
2355246	Arsenic	102	101	P/P	80 - 120
2355246	Barium	105	104	P/P	80 - 120
2355246	Beryllium	98.4	96.8	P/P	80 - 120
2355246	Boron	105	103	P/P	80 - 120
2355246	Cadmium	99.8	98.3	P/P	80 - 120
2355246	Chromium	106	105	P/P	80 - 120
2355246	Cobalt	97.3	95.0	P/P	80 - 120
2355246	Copper	98.5	97.2	P/P	80 - 120
2355246	Lead	93.8	92.8	P/P	80 - 120
2355246	Manganese	104	100	P/P	80 - 120
2355246	Molybdenum	100	98.0	P/P	80 - 120
2355246	Nickel	101	99.0	P/P	80 - 120
2355246	Selenium	102	99.2	P/P	80 - 120
2355246	Silver	88.3	86.8	P/P	80 - 120
2355246	Thallium	99.5	99.8	P/P	80 - 120
2355260	Antimony	107		P	80 - 120
2355260	Arsenic	104		P	80 - 120
2355260	Barium	109		P	80 - 120
2355260	Beryllium	98.4		P	80 - 120
2355260	Boron	105		P	80 - 120
2355260	Cadmium	103		P	80 - 120
2355260	Chromium	106		P	80 - 120
2355260	Cobalt	98.7		P	80 - 120
2355260	Copper	102		P	80 - 120
2355260	Lead	95.5		P	80 - 120
2355260	Manganese	104		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355260	Molybdenum	101		P	80 - 120
2355260	Nickel	101		P	80 - 120
2355260	Selenium	104		P	80 - 120
2355260	Silver	90.8		P	80 - 120
2355260	Thallium	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354242	Aluminum	97.8	98.9	P/P	80 - 120
2355245	Aluminum	99.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355233	Chloride	97.6		P	90 - 110
2355262	Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355233	Sulfate	98.7		P	90 - 110
2355262	Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355235	Ammonia-N	97.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355256	Kjeldahl Nitrogen	112	103	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355235	NO2NO3-N	94.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355127	Total-P	97.7	102	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P419771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355410	Fluoride	98.2	98.8	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355126	Organic Carbon	96.5	96.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P419756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2356299	Organic Carbon	97.9	97.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355262	Color (true)	1.37	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P419385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355487	Color (true)	0.0916	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355232	Turbidity	2.88	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355246	Calcium	4.90	Spike	P	0 - 20
2355246	Iron	2.43	Spike	P	0 - 20
2355246	Magnesium	2.84	Spike	P	0 - 20
2355246	Potassium	2.29	Spike	P	0 - 20
2355246	Sodium	2.44	Spike	P	0 - 20
2355246	Strontium	2.08	Spike	P	0 - 20
2355246	Tin	2.23	Spike	P	0 - 20
2355246	Titanium	2.84	Spike	P	0 - 20
2355246	Vanadium	3.33	Spike	P	0 - 20
2355246	Zinc	2.52	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355246	Antimony	2.11	Spike	P	0 - 20
2355246	Arsenic	1.45	Spike	P	0 - 20
2355246	Barium	1.08	Spike	P	0 - 20
2355246	Beryllium	1.58	Spike	P	0 - 20
2355246	Boron	1.02	Spike	P	0 - 20
2355246	Cadmium	1.50	Spike	P	0 - 20
2355246	Chromium	0.819	Spike	P	0 - 20
2355246	Cobalt	2.31	Spike	P	0 - 20
2355246	Copper	1.37	Spike	P	0 - 20
2355246	Lead	1.11	Spike	P	0 - 20
2355246	Manganese	1.14	Spike	P	0 - 20
2355246	Molybdenum	2.07	Spike	P	0 - 20
2355246	Nickel	1.95	Spike	P	0 - 20
2355246	Selenium	2.79	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355246	Silver	1.71	Spike	P	0 - 20
2355246	Thallium	0.302	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354242	Aluminum	0.856	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355233	Chloride	0.0390	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355233	Sulfate	0.337	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355235	Ammonia-N	0.450	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355491	Kjeldahl Nitrogen	0.325	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355256	Kjeldahl Nitrogen	6.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355235	NO2NO3-N	0.173	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355127	Total-P	2.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355263	Total-P	2.77	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P419767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355410	Total Alkalinity	1.90	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P419798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355366	TDS	7.94	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P419771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355410	Fluoride	0.474	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355126	Organic Carbon	0.260	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P419756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2356299	Organic Carbon	0.190	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: A114652

Included Lab Sample IDs: 2355232, 2355233, 2355236, 2355238

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

Reference Method: DEP SOP: NU-094-1

Run ID: A114654

Included Lab Sample IDs: 2355232, 2355233, 2355238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A114656

Included Lab Sample IDs: 2355236

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114704

Included Lab Sample IDs: 2355245, 2355246, 2355247, 2355249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	101	P/P	90 - 110
Antimony	99.2	100	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Arsenic	105	102	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Barium	99.2	102	P/P	90 - 110
Beryllium	97.8	99.6	P/P	90 - 110
Beryllium	99.3	98.4	P/P	90 - 110
Boron	97.1	98.4	P/P	90 - 110
Boron	97.8	98.7	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	103	104	P/P	90 - 110
Chromium	103	104	P/P	90 - 110
Cobalt	101	97.8	P/P	90 - 110
Cobalt	96.8	96.2	P/P	90 - 110
Copper	105	101	P/P	90 - 110
Copper	99.9	99.6	P/P	90 - 110
Lead	90.2	90.1	P/P	90 - 110
Lead	90.6	90.7	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Manganese	102	104	P/P	90 - 110
Molybdenum	97.4	96.7	P/P	90 - 110
Molybdenum	99.1	98.0	P/P	90 - 110
Nickel	105	101	P/P	90 - 110
Nickel	99.8	98.8	P/P	90 - 110
Selenium	101	103	P/P	90 - 110
Selenium	104	103	P/P	90 - 110
Silver	95.5	95.7	P/P	90 - 110
Silver	96.4	96.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114704

Included Lab Sample IDs: 2355245, 2355246, 2355247, 2355249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	101	102	P/P	90 - 110
Thallium	101	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114720

Included Lab Sample IDs: 2355234, 2355235, 2355237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	96.6	P/P	90 - 110
Organic Carbon	96.6	97.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114728

Included Lab Sample IDs: 2355245, 2355246, 2355247, 2355249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	100	104	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	104	102	P/P	90 - 110
Potassium	102	105	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Potassium	105	104	P/P	90 - 110
Sodium	100	102	P/P	90 - 110
Sodium	100	100	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Strontium	99.2	99.6	P/P	90 - 110
Strontium	99.6	99.5	P/P	90 - 110
Strontium	99.7	99.5	P/P	90 - 110
Tin	101	102	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Tin	102	102	P/P	90 - 110
Titanium	97.6	97.3	P/P	90 - 110
Titanium	98.0	97.4	P/P	90 - 110
Titanium	98.3	97.6	P/P	90 - 110
Vanadium	97.9	98.3	P/P	90 - 110
Vanadium	98.3	98.1	P/P	90 - 110
Vanadium	98.6	98.2	P/P	90 - 110
Zinc	97.1	97.1	P/P	90 - 110
Zinc	97.5	97.1	P/P	90 - 110
Zinc	99.1	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114744

Included Lab Sample IDs: 2355234, 2355235, 2355237, 2355239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114750

Included Lab Sample IDs: 2355234, 2355235, 2355239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114755

Included Lab Sample IDs: 2355234, 2355235, 2355237, 2355239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	97.8	P/P	90 - 110
Total-P	99.8	98.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114771

Included Lab Sample IDs: 2355245, 2355246, 2355247, 2355249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Magnesium	100	98.9	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114789

Included Lab Sample IDs: 2355232, 2355233, 2355236, 2355238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.8	100	P/P	90 - 110
Sulfate	99.7	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114798

Included Lab Sample IDs: 2355245, 2355246, 2355247, 2355249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.3	96.2	P/P	90 - 110
Aluminum	98.2	97.3	P/P	90 - 110
Aluminum	100	97.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114799

Included Lab Sample IDs: 2355239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	96.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114801

Included Lab Sample IDs: 2355232, 2355233, 2355236, 2355238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	96.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A114801

Included Lab Sample IDs: 2355232, 2355233, 2355236, 2355238

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114823

Included Lab Sample IDs: 2355237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114826

Included Lab Sample IDs: 2355234, 2355235, 2355237, 2355239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	100				1.37	
	Color (true)	98.1				0.0916	
EPA 180.1 Rev. 2.0	Turbidity	97.3				2.88	
EPA 200.7 Rev. 4.4	Calcium	103	109	85.0	107		4.90
	Iron	106	108	106	107		2.43
	Magnesium	106	107	102	108		2.84
	Potassium	106	106	102	108		2.29
	Sodium	105	102	104			2.44
	Strontium	103	103	101	103		2.08
	Tin	107	107	104	106		2.23
	Titanium	103	105	102	102		2.84
	Vanadium	102	104	100	101		3.33
	Zinc	102	101	98.9	101		2.52
EPA 200.8 Rev. 5.4	Aluminum	99.1	97.8	98.9	99.1		0.856
	Antimony	102	104	102	107		2.11
	Arsenic	102	102	101	104		1.45
	Barium	105	105	104	109		1.08
	Beryllium	100	98.4	96.8	98.4		1.58
	Boron	101	105	105	103		1.02
	Cadmium	98.8	99.8	98.3	103		1.50
	Chromium	100	106	105	106		0.819
	Cobalt	96.5	97.3	95.0	98.7		2.31
	Copper	99.4	98.5	97.2	102		1.37
	Lead	91.8	93.8	92.8	95.5		1.11
	Manganese	98.9	104	100	104		1.14
	Molybdenum	97.6	100	98.0	101		2.07
	Nickel	101	101	99.0	101		1.95
	Selenium	102	102	99.2	104		2.79
	Silver	88.3	88.3	86.8	90.8		1.71
	Thallium	97.4	99.5	99.8	101		0.302
EPA 300.0 Rev. 2.1	Chloride	99.4	97.6	97.1		0.0390	
	Sulfate	98.6	98.7	95.1		0.337	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	97.2	97.8			0.450
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104					0.325
	Kjeldahl Nitrogen	105	112	103			6.42
EPA 353.2 Rev. 2.0	NO2NO3-N	100	94.2				0.173
EPA 365.1 Rev. 2.0	Total-P	102	97.7	102			2.53
	Total-P	104					2.77
SM 2320 B-2011	Total Alkalinity	102				1.90	
SM 2540 C-2011	TDS					7.94	
SM 4500-F- C-2011	Fluoride	101	98.2	98.8			0.474
SM 5310 B-2011	Organic Carbon	96.4	96.5	96.0			0.260
	Organic Carbon	95.7	97.9	97.6			0.190

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2355232, 2355233, 2355236, 2355238
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2355232, 2355233, 2355236, 2355238
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2355245, 2355246, 2355247, 2355249
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2355245, 2355246, 2355247, 2355249

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2355232, 2355233, 2355236, 2355238
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2355232, 2355233, 2355236, 2355238
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2355234, 2355235, 2355237, 2355239
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2355234, 2355235, 2355237, 2355239
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2355234, 2355235, 2355237, 2355239
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2355234, 2355235, 2355237, 2355239
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2355232, 2355233, 2355236, 2355238
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2355245, 2355246, 2355247, 2355249
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2355232, 2355233, 2355236, 2355238
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2355232, 2355233, 2355236, 2355238
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2355232, 2355233, 2355236, 2355238
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2355234, 2355235, 2355237, 2355239

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	09/08/2022			09/09/2022 15:03	Samantha L Bates	2355232
	09/08/2022			09/09/2022 15:04	Samantha L Bates	2355233
	09/08/2022			09/09/2022 15:05	Samantha L Bates	2355238
	09/08/2022			09/09/2022 16:25	Samantha L Bates	2355236
EPA 180.1 Rev. 2.0	09/08/2022			09/09/2022 13:08	Khloe J Berg	2355232
	09/08/2022			09/09/2022 13:09	Khloe J Berg	2355233
	09/08/2022			09/09/2022 13:10	Khloe J Berg	2355236
	09/08/2022			09/09/2022 13:11	Khloe J Berg	2355238
EPA 200.7 Rev. 4.4	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/14/2022 20:36	McKinley C Carter	2355249
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/14/2022 23:35	McKinley C Carter	2355245
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/14/2022 23:43	McKinley C Carter	2355246
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/15/2022 00:41	McKinley C Carter	2355247
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/15/2022 19:58	McKinley C Carter	2355249
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/15/2022 22:29	McKinley C Carter	2355245
EPA 200.8 Rev. 5.4	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/15/2022 22:37	McKinley C Carter	2355246
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/15/2022 23:07	McKinley C Carter	2355247
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/13/2022 15:20	Megan Whitefoot	2355249
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/13/2022 15:59	Megan Whitefoot	2355246
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/13/2022 19:40	Megan Whitefoot	2355245
	09/08/2022	09/12/2022 10:30	Megan Whitefoot	09/13/2022 19:50	Megan Whitefoot	2355247
	09/08/2022	09/16/2022 09:25	Megan Whitefoot	09/16/2022 21:06	Emily M Philpot	2355246
	09/08/2022	09/16/2022 09:25	Megan Whitefoot	09/16/2022 21:12	Emily M Philpot	2355247
	09/08/2022	09/16/2022 09:25	Megan Whitefoot	09/16/2022 23:32	Emily M Philpot	2355249
	09/08/2022	09/16/2022 09:25	Megan Whitefoot	09/17/2022 01:32	Emily M Philpot	2355245
EPA 300.0 Rev. 2.1	09/08/2022			09/16/2022 16:53	Anna M. Plaviak	2355233
	09/08/2022			09/16/2022 18:38	Anna M. Plaviak	2355232
	09/08/2022			09/16/2022 18:53	Anna M. Plaviak	2355236
	09/08/2022			09/16/2022 19:08	Anna M. Plaviak	2355238
EPA 350.1 Rev. 2.0	09/08/2022			09/14/2022 13:22	Ping Hua	2355235
	09/08/2022			09/14/2022 13:28	Ping Hua	2355234
	09/08/2022			09/14/2022 13:30	Ping Hua	2355237
	09/08/2022			09/14/2022 13:36	Ping Hua	2355239
EPA 351.2 Rev. 2.0	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/15/2022 13:06	Samantha L Bates	2355234
	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/15/2022 13:08	Samantha L Bates	2355235
	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/15/2022 13:10	Samantha L Bates	2355239
	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/20/2022 11:15	Samantha L Bates	2355237
EPA 353.2 Rev. 2.0	09/08/2022			09/20/2022 11:41	Beverly Y. Sanders	2355235
	09/08/2022			09/20/2022 11:49	Beverly Y. Sanders	2355234
	09/08/2022			09/20/2022 11:51	Beverly Y. Sanders	2355237
	09/08/2022			09/20/2022 11:52	Beverly Y. Sanders	2355239

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 16:32	James L Waggeberby	2355239
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 17:08	James L Waggeberby	2355234
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 17:09	James L Waggeberby	2355235
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 17:10	James L Waggeberby	2355237
SM 2320 B-2011	09/08/2022			09/17/2022 05:37	Dale L. Simmons	2355232
	09/08/2022			09/17/2022 05:47	Dale L. Simmons	2355236
	09/08/2022			09/17/2022 05:56	Dale L. Simmons	2355238
	09/08/2022			09/17/2022 06:39	Dale L. Simmons	2355233
SM 2340 B-2011	09/08/2022			09/15/2022 19:58	McKinley C Carter	2355249
	09/08/2022			09/15/2022 22:29	McKinley C Carter	2355245
	09/08/2022			09/15/2022 22:37	McKinley C Carter	2355246
	09/08/2022			09/15/2022 23:07	McKinley C Carter	2355247
SM 2540 C-2011	09/08/2022			09/14/2022 15:45	Yijie Li	2355232, 2355233, 2355236, 2355238
SM 2540 D-2011	09/08/2022			09/14/2022 15:45	Yijie Li	2355232, 2355233, 2355236, 2355238
SM 4500-F- C-2011	09/08/2022			09/17/2022 05:37	Dale L. Simmons	2355232
	09/08/2022			09/17/2022 05:47	Dale L. Simmons	2355236
	09/08/2022			09/17/2022 05:56	Dale L. Simmons	2355238
	09/08/2022			09/17/2022 06:39	Dale L. Simmons	2355233
SM 5310 B-2011	09/08/2022			09/14/2022 02:26	Khloe J Berg	2355234
	09/08/2022			09/14/2022 03:15	Khloe J Berg	2355235
	09/08/2022			09/14/2022 03:31	Khloe J Berg	2355237
	09/08/2022			09/16/2022 16:36	Khloe J Berg	2355239