Chemical Analysis Report

TLH-ROC-2022-01-31-03

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

Event Description: **Run 16**
Request ID: **RQ-2022-01-17-49**
Customer: **TLH-ROC**
Project ID: **SMP**

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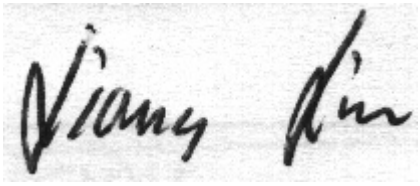
Date Certified: 23-FEB-2022 14:29



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: South Mosquito Creek @ Power Line **Collection Date/Time: 01/31/2022 10:45**

Field ID: G2TLHR0039 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302635	DEP SOP: NU-094-1	Color (true)**	24		PCU	P409258	
	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P409273	
	EPA 300.0 Rev. 2.1	Sulfate	0.87		mg SO4/L	P409422	
	SM 2320 B-2011	Total Alkalinity	18		mg CaCO3/L	P409433	
	SM 2540 C-2011	TDS	44		mg/L	P409805	
	SM 2540 D-2011	TSS	8	I	mg/L	P409807	
	SM 4500 F-C-2011	Fluoride	0.049	I	mg F/L	P409436	
2302639	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P409636	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P409303	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.62		mg N/L	P409451	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P409295	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P409975	
2302643	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P409260	
2302655	EPA 200.7 Rev. 4.4	Calcium	5.42		mg/L	P409367	
		Iron	570		ug/L	P409367	
		Magnesium	2.66		mg/L	P409367	
		Potassium	0.55	I	mg/L	P409367	
		Sodium	2.2		mg/L	P409367	
		Strontium	13.7		ug/L	P409367	
		Tin	3.0	U	ug/L	P409367	
		Titanium	2.8	I	ug/L	P409367	
		Vanadium	2.0	U	ug/L	P409367	
		Zinc	5.0	U	ug/L	P409367	
	EPA 200.8 Rev. 5.4	Aluminum	208		ug/L	P409367	
		Antimony	0.050	U	ug/L	P409367	
		Arsenic	0.26		ug/L	P409367	
		Barium	15.5		ug/L	P409367	
		Beryllium	0.018	I	ug/L	P409367	
		Boron**	8.8		ug/L	P409367	
		Cadmium	0.020	U	ug/L	P409367	
		Chromium	0.40	U	ug/L	P409367	
		Cobalt	0.150		ug/L	P409367	
		Copper	0.40	U	ug/L	P409367	
		Lead	0.20	U	ug/L	P409367	
		Manganese	23.7		ug/L	P409367	
		Molybdenum	0.15	U	ug/L	P409367	
		Nickel	0.50	U	ug/L	P409367	
		Selenium	0.20	U	ug/L	P409367	
		Silver	0.010	U	ug/L	P409367	
		Thallium	0.10	U	ug/L	P409367	
	SM 2340B	Hardness	24.5		mg/L	P409367	

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: Flat Creek @ CR269 **Collection Date/Time: 01/31/2022 09:40**

Field ID: G2TLHR0020 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302636	DEP SOP: NU-094-1	Color (true)**	25		PCU	P409258	
	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P409273	
	EPA 300.0 Rev. 2.1	Sulfate	1.1		mg SO4/L	P409422	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P409433	
	SM 2540 C-2011	TDS	36		mg/L	P409805	
	SM 2540 D-2011	TSS	9	I	mg/L	P409807	
	SM 4500 F-C-2011	Fluoride	0.075	I	mg F/L	P409436	
2302640	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P409636	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P409303	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P409451	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P409295	
	SM 5310 B-2011	Organic Carbon	2.5		mg C/L	P409975	
2302644	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P409260	
2302656	EPA 200.7 Rev. 4.4	Calcium	4.38		mg/L	P409367	
		Iron	790		ug/L	P409367	
		Magnesium	1.93		mg/L	P409367	
		Potassium	0.48	I	mg/L	P409367	
		Sodium	2.0		mg/L	P409367	
		Strontium	12.1		ug/L	P409367	
		Tin	3.0	U	ug/L	P409367	
		Titanium	3.6		ug/L	P409367	
		Vanadium	2.0	U	ug/L	P409367	
		Zinc	5.0	U	ug/L	P409367	
	EPA 200.8 Rev. 5.4	Aluminum	222		ug/L	P409367	
		Antimony	0.050	U	ug/L	P409367	
		Arsenic	0.32		ug/L	P409367	
		Barium	11.9		ug/L	P409367	
		Beryllium	0.011	I	ug/L	P409367	
		Boron**	9.0		ug/L	P409367	
		Cadmium	0.020	U	ug/L	P409367	
		Chromium	0.41	I	ug/L	P409367	
		Cobalt	0.143		ug/L	P409367	
		Copper	0.40	U	ug/L	P409367	
		Lead	0.20	U	ug/L	P409367	
		Manganese	26.9		ug/L	P409367	
		Molybdenum	0.15	U	ug/L	P409367	
		Nickel	0.50	U	ug/L	P409367	
		Selenium	0.20	U	ug/L	P409367	
		Silver	0.010	U	ug/L	P409367	
		Thallium	0.10	U	ug/L	P409367	
	SM 2340B	Hardness	18.9		mg/L	P409367	

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: Crooked Creek @ Aspalaga Rd **Collection Date/Time: 01/31/2022 11:30**

Field ID: G2TLHR0010 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302637	DEP SOP: NU-094-1	Color (true)**	22		PCU	P409258	
	EPA 180.1 Rev. 2.0	Turbidity	6.1		NTU	P409273	
	EPA 300.0 Rev. 2.1	Sulfate	1.2		mg SO4/L	P409422	
	SM 2320 B-2011	Total Alkalinity	9.3		mg CaCO3/L	P409433	
	SM 2540 C-2011	TDS	29		mg/L	P409805	
	SM 2540 D-2011	TSS	6	I	mg/L	P409807	
	SM 4500 F-C-2011	Fluoride	0.060	I	mg F/L	P409436	
2302641	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P409636	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P409304	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P409515	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P409295	
	SM 5310 B-2011	Organic Carbon	2.1		mg C/L	P409975	
2302645	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P409261	
2302657	EPA 200.7 Rev. 4.4	Calcium	3.37		mg/L	P409367	
		Iron	410		ug/L	P409367	
		Magnesium	1.16		mg/L	P409367	
		Potassium	0.30	U	mg/L	P409367	
		Sodium	1.4	I	mg/L	P409367	
		Strontium	7.7	I	ug/L	P409367	
		Tin	3.0	U	ug/L	P409367	
		Titanium	3.2		ug/L	P409367	
		Vanadium	2.0	U	ug/L	P409367	
		Zinc	5.0	U	ug/L	P409367	
	EPA 200.8 Rev. 5.4	Aluminum	205		ug/L	P409367	
		Antimony	0.050	U	ug/L	P409367	
		Arsenic	0.24		ug/L	P409367	
		Barium	8.60		ug/L	P409367	
		Beryllium	0.027	I	ug/L	P409367	
		Boron**	7.0	I	ug/L	P409367	
		Cadmium	0.020	U	ug/L	P409367	
		Chromium	0.40	U	ug/L	P409367	
		Cobalt	0.095		ug/L	P409367	
		Copper	1.17		ug/L	P409367	
		Lead	0.20	U	ug/L	P409367	
		Manganese	12.7		ug/L	P409367	
		Molybdenum	0.15	U	ug/L	P409367	
		Nickel	0.50	U	ug/L	P409367	
		Selenium	0.20	U	ug/L	P409367	
		Silver	0.010	U	ug/L	P409367	
		Thallium	0.10	U	ug/L	P409367	
	SM 2340B	Hardness	13.2		mg/L	P409367	

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: Tributary South Mosquito Creek **Collection Date/Time: 01/31/2022 10:25**

Field ID: G2TLHR0008 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302638	DEP SOP: NU-094-1	Color (true)**	14		PCU	P409258	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P409273	
	EPA 300.0 Rev. 2.1	Sulfate	1.2		mg SO4/L	P409479	
	SM 2320 B-2011	Total Alkalinity	71		mg CaCO3/L	P409433	
	SM 2540 C-2011	TDS	92		mg/L	P409805	
	SM 2540 D-2011	TSS	2	I	mg/L	P409807	
	SM 4500 F-C-2011	Fluoride	0.077	I	mg F/L	P409436	
2302642	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P409636	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P409303	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P409515	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P409295	
	SM 5310 B-2011	Organic Carbon	1.8		mg C/L	P409975	
2302646	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P409261	
2302658	EPA 200.7 Rev. 4.4	Calcium	18.1		mg/L	P409367	
		Iron	340		ug/L	P409367	
		Magnesium	7.04		mg/L	P409367	
		Potassium	0.88	I	mg/L	P409367	
		Sodium	2.5		mg/L	P409367	
		Strontium	22.7		ug/L	P409367	
		Tin	3.0	U	ug/L	P409367	
		Titanium	1.9	I	ug/L	P409367	
		Vanadium	2.0	U	ug/L	P409367	
		Zinc	5.0	U	ug/L	P409367	
	EPA 200.8 Rev. 5.4	Aluminum	155		ug/L	P409367	
		Antimony	0.050	U	ug/L	P409367	
		Arsenic	0.21		ug/L	P409367	
		Barium	19.4		ug/L	P409367	
		Beryllium	0.010	U	ug/L	P409367	
		Boron**	10.3		ug/L	P409367	
		Cadmium	0.020	U	ug/L	P409367	
		Chromium	0.40	U	ug/L	P409367	
		Cobalt	0.139		ug/L	P409367	
		Copper	0.40	U	ug/L	P409367	
		Lead	0.20	U	ug/L	P409367	
		Manganese	31.3		ug/L	P409367	
		Molybdenum	0.21	I	ug/L	P409367	
		Nickel	0.50	U	ug/L	P409367	
		Selenium	0.20	U	ug/L	P409367	
		Silver	0.010	U	ug/L	P409367	
		Thallium	0.10	U	ug/L	P409367	
	SM 2340B	Hardness	74.3		mg/L	P409367	

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: P409258

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409273

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409367

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: P409367

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409636

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409304

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409451

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409515

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409295

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409260

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409261

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P409433

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P409805

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409807

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409975

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: P409258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.9		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	105		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	105		P	85 - 115
Sodium	99.0		P	85 - 115
Strontium	104		P	85 - 115
Tin	110		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	98.4		P	85 - 115
Zinc	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	94.8		P	85 - 115
Boron	103		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	102		P	85 - 115
Copper	99.7		P	85 - 115
Lead	101		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	98.8		P	85 - 115
Nickel	103		P	85 - 115
Selenium	102		P	85 - 115
Silver	106		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409304

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409515

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: P409295

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409261

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P409433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409975

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302658	Calcium	103		P	80 - 120
2302658	Iron	105	108	P/P	80 - 120
2302658	Magnesium	102		P	80 - 120
2302658	Potassium	101	104	P/P	80 - 120
2302658	Sodium	101	104	P/P	80 - 120
2302658	Strontium	103	104	P/P	80 - 120
2302658	Tin	109	109	P/P	80 - 120
2302658	Titanium	110	105	P/P	80 - 120
2302658	Vanadium	101	98.8	P/P	80 - 120
2302658	Zinc	106	105	P/P	80 - 120
2302782	Calcium	102		P	80 - 120
2302782	Iron	107		P	80 - 120
2302782	Magnesium	106		P	80 - 120
2302782	Potassium	103		P	80 - 120
2302782	Sodium	104		P	80 - 120
2302782	Strontium	103		P	80 - 120
2302782	Tin	107		P	80 - 120
2302782	Titanium	103		P	80 - 120
2302782	Vanadium	97.9		P	80 - 120
2302782	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302658	Aluminum	101	103	P/P	80 - 120
2302658	Antimony	99.9	99.9	P/P	80 - 120
2302658	Arsenic	98.9	99.3	P/P	80 - 120
2302658	Barium	105	105	P/P	80 - 120
2302658	Beryllium	100	98.2	P/P	80 - 120
2302658	Boron	106	107	P/P	80 - 120
2302658	Cadmium	102	109	P/P	80 - 120
2302658	Chromium	103	103	P/P	80 - 120
2302658	Cobalt	99.4	99.5	P/P	80 - 120
2302658	Copper	96.9	96.9	P/P	80 - 120
2302658	Lead	101	100	P/P	80 - 120
2302658	Manganese	106	106	P/P	80 - 120
2302658	Molybdenum	98.2	104	P/P	80 - 120
2302658	Nickel	100	99.8	P/P	80 - 120
2302658	Selenium	97.5	96.0	P/P	80 - 120
2302658	Silver	105	105	P/P	80 - 120
2302658	Thallium	106	106	P/P	80 - 120
2302782	Aluminum	99.6		P	80 - 120
2302782	Antimony	99.6		P	80 - 120
2302782	Arsenic	98.4		P	80 - 120
2302782	Barium	102		P	80 - 120
2302782	Beryllium	96.8		P	80 - 120
2302782	Boron	107		P	80 - 120
2302782	Cadmium	107		P	80 - 120
2302782	Chromium	99.0		P	80 - 120
2302782	Cobalt	98.3		P	80 - 120
2302782	Copper	94.3		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302782	Lead	99.6		P	80 - 120
2302782	Manganese	99.9		P	80 - 120
2302782	Molybdenum	104		P	80 - 120
2302782	Nickel	97.3		P	80 - 120
2302782	Selenium	95.4		P	80 - 120
2302782	Silver	105		P	80 - 120
2302782	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302141	Sulfate	98.7		P	90 - 110
2302392	Sulfate	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302705	Sulfate	94.5		P	90 - 110
2302862	Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302395	Ammonia-N	97.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302640	Kjeldahl Nitrogen	100	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409451

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302605	NO2NO3-N	98.9	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302669	NO2NO3-N	100	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302604	Total-P	103	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302643	O-Phosphate-P	97.3	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302754	O-Phosphate-P	97.8	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302600	Fluoride	99.2	98.5	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302623	Organic Carbon	97.6	94.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P409258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302668	Color (true)	0.702	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302628	Turbidity	1.93	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302658	Calcium	0.940	Spike	P	0 - 20
2302658	Iron	2.42	Spike	P	0 - 20
2302658	Magnesium	2.41	Spike	P	0 - 20
2302658	Potassium	2.09	Spike	P	0 - 20
2302658	Sodium	2.17	Spike	P	0 - 20
2302658	Strontium	0.931	Spike	P	0 - 20
2302658	Tin	0.199	Spike	P	0 - 20
2302658	Titanium	3.99	Spike	P	0 - 20
2302658	Vanadium	1.74	Spike	P	0 - 20
2302658	Zinc	1.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302658	Aluminum	0.926	Spike	P	0 - 20
2302658	Antimony	0.00774	Spike	P	0 - 20
2302658	Arsenic	0.320	Spike	P	0 - 20
2302658	Barium	0.457	Spike	P	0 - 20
2302658	Beryllium	1.78	Spike	P	0 - 20
2302658	Boron	0.848	Spike	P	0 - 20
2302658	Cadmium	6.93	Spike	P	0 - 20
2302658	Chromium	0.169	Spike	P	0 - 20
2302658	Cobalt	0.104	Spike	P	0 - 20
2302658	Copper	0.0410	Spike	P	0 - 20
2302658	Lead	0.322	Spike	P	0 - 20
2302658	Manganese	0.0581	Spike	P	0 - 20
2302658	Molybdenum	5.86	Spike	P	0 - 20
2302658	Nickel	0.181	Spike	P	0 - 20
2302658	Selenium	1.51	Spike	P	0 - 20
2302658	Silver	0.0346	Spike	P	0 - 20
2302658	Thallium	0.488	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302141	Sulfate	1.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	Sulfate	1.26	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302395	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302640	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302753	Kjeldahl Nitrogen	3.87	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302605	NO2NO3-N	0.885	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302669	NO2NO3-N	0.434	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302604	Total-P	1.87	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302643	O-Phosphate-P	1.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302754	O-Phosphate-P	0.683	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P409433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302600	Total Alkalinity	0.518	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	TDS	2.61	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302600	Fluoride	0.480	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302623	Organic Carbon	2.02	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A110150
Included Lab Sample IDs: 2302635, 2302636, 2302637, 2302638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A110151
Included Lab Sample IDs: 2302643, 2302644, 2302645, 2302646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	100	P/P	90 - 110
O-Phosphate-P	99.7	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110154
Included Lab Sample IDs: 2302635, 2302636, 2302637, 2302638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	100	101	P/P	90 - 110
Sulfate	98.6	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A110157
Included Lab Sample IDs: 2302635, 2302636, 2302637, 2302638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110219
Included Lab Sample IDs: 2302655, 2302656, 2302657, 2302658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.3	99.4	P/P	90 - 110
Aluminum	99.4	100	P/P	90 - 110
Antimony	94.4	94.6	P/P	90 - 110
Antimony	94.6	94.2	P/P	90 - 110
Arsenic	96.9	97.3	P/P	90 - 110
Arsenic	97.9	96.9	P/P	90 - 110
Barium	98.6	98.8	P/P	90 - 110
Barium	98.8	97.3	P/P	90 - 110
Beryllium	94.4	94.9	P/P	90 - 110
Beryllium	95.9	94.4	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Boron	94.1	101	P/P	90 - 110
Chromium	97.4	98.9	P/P	90 - 110
Chromium	98.9	98.1	P/P	90 - 110
Cobalt	98.1	96.7	P/P	90 - 110
Cobalt	98.3	98.1	P/P	90 - 110
Copper	96.1	96.0	P/P	90 - 110
Copper	96.9	96.1	P/P	90 - 110
Lead	96.0	96.7	P/P	90 - 110
Lead	97.1	96.0	P/P	90 - 110
Manganese	100	99.3	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110219
Included Lab Sample IDs: 2302655, 2302656, 2302657, 2302658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	98.4	100	P/P	90 - 110
Nickel	98.6	99.2	P/P	90 - 110
Nickel	99.2	97.7	P/P	90 - 110
Selenium	95.5	97.4	P/P	90 - 110
Selenium	97.4	95.7	P/P	90 - 110
Silver	95.0	96.0	P/P	90 - 110
Silver	96.0	95.1	P/P	90 - 110
Thallium	103	104	P/P	90 - 110
Thallium	104	103	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A110225
Included Lab Sample IDs: 2302635, 2302636, 2302637, 2302638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A110225
Included Lab Sample IDs: 2302635, 2302636, 2302637, 2302638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110238
Included Lab Sample IDs: 2302640, 2302641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110249
Included Lab Sample IDs: 2302655, 2302656, 2302657, 2302658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	104	99.6	P/P	90 - 110
Cadmium	99.6	100	P/P	90 - 110
Molybdenum	102	97.2	P/P	90 - 110
Molybdenum	97.2	97.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110255
Included Lab Sample IDs: 2302655, 2302656, 2302657, 2302658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	98.7	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	99.9	101	P/P	90 - 110
Potassium	96.4	96.8	P/P	90 - 110
Sodium	98.4	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110255
Included Lab Sample IDs: 2302655, 2302656, 2302657, 2302658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	101	101	P/P	90 - 110
Tin	103	104	P/P	90 - 110
Titanium	102	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110264
Included Lab Sample IDs: 2302641, 2302642

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110265
Included Lab Sample IDs: 2302639, 2302640, 2302641, 2302642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	96.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110277
Included Lab Sample IDs: 2302639, 2302642

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110313
Included Lab Sample IDs: 2302639, 2302640, 2302641, 2302642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	96.4	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110463
Included Lab Sample IDs: 2302639, 2302640, 2302641, 2302642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	91.7	P/P	90 - 110
Organic Carbon	93.5	93.4	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		
						LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	99.2					0.702	
EPA 180.1 Rev. 2.0	Turbidity	95.9					1.93	
EPA 200.7 Rev. 4.4	Calcium	103	103	102				0.940
	Iron	105	105	108	107			2.42
	Magnesium	103	102	106				2.41
	Potassium	105	101	104	103			2.09
	Sodium	99.0	101	104	104			2.17
	Strontium	104	103	104	103			0.931
	Tin	110	109	109	107			0.199
	Titanium	105	110	105	103			3.99
	Vanadium	98.4	101	98.8	97.9			1.74
	Zinc	108	106	105	104			1.58
EPA 200.8 Rev. 5.4	Aluminum	102	101	103	99.6			0.926
	Antimony	99.6	99.9	99.9	99.6			0.0077
	Arsenic	102	98.9	99.3	98.4			0.320
	Barium	105	105	105	102			0.457
	Beryllium	94.8	100	98.2	96.8			1.78
	Boron	103	106	107	107			0.848
	Cadmium	104	102	109	107			6.93
	Chromium	101	103	103	99.0			0.169
	Cobalt	102	99.4	99.5	98.3			0.104
	Copper	99.7	96.9	96.9	94.3			0.0410
	Lead	101	101	100	99.6			0.322
	Manganese	102	106	106	99.9			0.0581
	Molybdenum	98.8	98.2	104	104			5.86
	Nickel	103	100	99.8	97.3			0.181
	Selenium	102	95.4	97.5	96.0			1.51
	Silver	106	105	105	105			0.0346
	Thallium	104	106	106	107			0.488
EPA 300.0 Rev. 2.1	Sulfate	100	98.7	95.6			1.02	
	Sulfate	96.9	94.5	94.5			1.26	
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	97.6	98.8				1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	100	96.0				3.61
	Kjeldahl Nitrogen	97.0						3.87
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.9	97.9				0.885
	NO2NO3-N	100	100	99.6				0.434
EPA 365.1 Rev. 2.0	Total-P	102	103	101				1.87
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	97.3	99.1				1.63
	O-Phosphate-P	99.8	97.8	98.8				0.683
SM 2320 B-2011	Total Alkalinity	98.6					0.518	
SM 2540 C-2011	TDS						2.61	
SM 4500 F-C-2011	Fluoride	97.7	99.2	98.5				0.480
SM 5310 B-2011	Organic Carbon	96.4	97.6	94.9				2.02

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2302635, 2302636, 2302637, 2302638
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2302635, 2302636, 2302637, 2302638
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2302655, 2302656, 2302657, 2302658
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2302655, 2302656, 2302657, 2302658

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2302635, 2302636, 2302637, 2302638
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2302639, 2302640, 2302641, 2302642
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2302639, 2302640, 2302641, 2302642
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2302639, 2302640, 2302641, 2302642
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2302639, 2302640, 2302641, 2302642
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2302643, 2302644, 2302645, 2302646
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2302635, 2302636, 2302637, 2302638
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2302655, 2302656, 2302657, 2302658
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2302635, 2302636, 2302637, 2302638
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2302635, 2302636, 2302637, 2302638
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2302635, 2302636, 2302637, 2302638
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2302639, 2302640, 2302641, 2302642

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	01/31/2022			02/01/2022 14:54	Samantha L Bates	2302635
	01/31/2022			02/01/2022 14:55	Samantha L Bates	2302636
	01/31/2022			02/01/2022 14:56	Samantha L Bates	2302637
	01/31/2022			02/01/2022 14:57	Samantha L Bates	2302638
EPA 180.1 Rev. 2.0	01/31/2022			02/01/2022 15:06	Sarah A Nixon	2302635
	01/31/2022			02/01/2022 15:08	Sarah A Nixon	2302636
	01/31/2022			02/01/2022 15:10	Sarah A Nixon	2302637
	01/31/2022			02/01/2022 15:12	Sarah A Nixon	2302638
EPA 200.7 Rev. 4.4	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 14:31	Josef B Mick	2302655
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 14:39	Josef B Mick	2302656
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 14:47	Josef B Mick	2302657
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 14:53	Josef B Mick	2302658
EPA 200.8 Rev. 5.4	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/03/2022 18:10	McKinley C Carter	2302658
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/03/2022 19:40	McKinley C Carter	2302655
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/03/2022 19:49	McKinley C Carter	2302656
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/03/2022 19:58	McKinley C Carter	2302657
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 14:16	Alexander Thompson	2302658
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 15:17	Alexander Thompson	2302655
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 15:23	Alexander Thompson	2302656
	01/31/2022	02/03/2022 11:00	Emily M Philpot	02/04/2022 15:29	Alexander Thompson	2302657
EPA 300.0 Rev. 2.1	01/31/2022			02/04/2022 06:22	James L Waggerby	2302635
	01/31/2022			02/04/2022 06:34	James L Waggerby	2302636
	01/31/2022			02/04/2022 06:46	James L Waggerby	2302637
	01/31/2022			02/04/2022 14:01	James L Waggerby	2302638
EPA 350.1 Rev. 2.0	01/31/2022			02/09/2022 13:32	Roberta Tatti	2302639
	01/31/2022			02/09/2022 13:33	Roberta Tatti	2302640
	01/31/2022			02/09/2022 13:34	Roberta Tatti	2302641
	01/31/2022			02/09/2022 13:36	Roberta Tatti	2302642
EPA 351.2 Rev. 2.0	01/31/2022	02/03/2022 10:35	Samantha L Bates	02/04/2022 12:37	Alexandra J Mattheus	2302639
	01/31/2022	02/03/2022 10:35	Samantha L Bates	02/04/2022 12:39	Alexandra J Mattheus	2302640
	01/31/2022	02/03/2022 10:35	Samantha L Bates	02/04/2022 12:43	Alexandra J Mattheus	2302642
	01/31/2022	02/03/2022 10:35	Samantha L Bates	02/04/2022 13:00	Alexandra J Mattheus	2302641
EPA 353.2 Rev. 2.0	01/31/2022			02/04/2022 09:53	Beverly Y. Sanders	2302639
	01/31/2022			02/04/2022 09:54	Beverly Y. Sanders	2302640
	01/31/2022			02/07/2022 10:08	Beverly Y. Sanders	2302641
	01/31/2022			02/07/2022 10:09	Beverly Y. Sanders	2302642
EPA 365.1 Rev. 2.0	01/31/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/04/2022 11:18	Shengyu Ding	2302640
	01/31/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/04/2022 11:19	Shengyu Ding	2302641
	01/31/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/07/2022 14:16	Shengyu Ding	2302639
	01/31/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/07/2022 14:17	Shengyu Ding	2302642

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 dissolved	01/31/2022			02/01/2022 14:21	James L Waggerby	2302643
	01/31/2022			02/01/2022 14:32	James L Waggerby	2302644
	01/31/2022			02/01/2022 14:38	James L Waggerby	2302645
	01/31/2022			02/01/2022 14:39	James L Waggerby	2302646
SM 2320 B-2011	01/31/2022			02/04/2022 00:51	Dale L. Simmons	2302635
	01/31/2022			02/04/2022 01:02	Dale L. Simmons	2302636
	01/31/2022			02/04/2022 01:12	Dale L. Simmons	2302637
	01/31/2022			02/04/2022 01:24	Dale L. Simmons	2302638
SM 2340B	01/31/2022			02/04/2022 14:31	Josef B Mick	2302655
	01/31/2022			02/04/2022 14:39	Josef B Mick	2302656
	01/31/2022			02/04/2022 14:47	Josef B Mick	2302657
	01/31/2022			02/04/2022 14:53	Josef B Mick	2302658
SM 2540 C-2011	01/31/2022			02/04/2022 14:55	Yijie Li	2302635, 2302636, 2302637, 2302638
SM 2540 D-2011	01/31/2022			02/04/2022 14:55	Yijie Li	2302635, 2302636, 2302637, 2302638
SM 4500 F-C-2011	01/31/2022			02/04/2022 00:51	Dale L. Simmons	2302635
	01/31/2022			02/04/2022 01:02	Dale L. Simmons	2302636
	01/31/2022			02/04/2022 01:12	Dale L. Simmons	2302637
	01/31/2022			02/04/2022 01:24	Dale L. Simmons	2302638
SM 5310 B-2011	01/31/2022			02/16/2022 09:35	Nathaniel J Jones	2302639
	01/31/2022			02/16/2022 09:58	Nathaniel J Jones	2302640
	01/31/2022			02/16/2022 10:49	Nathaniel J Jones	2302641
	01/31/2022			02/16/2022 11:09	Nathaniel J Jones	2302642