Chemical Analysis Report

NE-DIST-2022-01-19-01

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

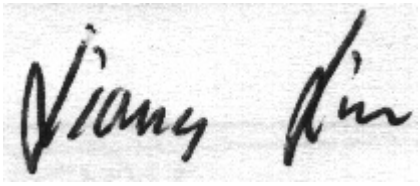
Event Description: **Nassau North 2022**
Request ID: **RQ-2022-01-24-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-FEB-2022 14:11



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: Escambia Slough at Escambia St. **Collection Date/Time: 01/18/2022 12:10**

Field ID: G4NE0287 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300263	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P408703	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P408795	
	SM 2540 D-2011	TSS	6	I A	mg/L	P409202	
	SM 4500 F-C-2011	Fluoride	0.81		mg F/L	P408798	
2300264	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P409225	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55	J	mg N/L	P408967	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P408785	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P408761	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P409300	
2300265	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.089		mg P/L	P408696	
2300279	EPA 200.7 Rev. 4.4	Calcium	283		mg/L	P408834	
		Iron	110	I	ug/L	P408834	
		Magnesium	867		mg/L	P408834	
		Strontium	5.19E+03		ug/L	P408834	
		Tin	150	U	ug/L	P408834	
		Vanadium	6.0	U	ug/L	P408834	
		Zinc	15	U	ug/L	P408834	
	EPA 200.8 Rev. 5.4	Aluminum	130		ug/L	P408834	
		Antimony	0.21	I	ug/L	P408834	
		Arsenic	1.86		ug/L	P408834	
		Beryllium	0.040	U	ug/L	P408834	
		Cadmium	0.080	U	ug/L	P408834	
		Chromium	1.6	U	ug/L	P408834	
		Cobalt	0.11	I	ug/L	P408834	
		Copper	1.6	U	ug/L	P408834	
		Lead	0.80	U	ug/L	P408834	
		Manganese	17.6		ug/L	P408834	
		Molybdenum	8.5		ug/L	P408834	
		Nickel	2.0	U	ug/L	P408834	
		Selenium	0.80	U	ug/L	P408834	
		Silver	0.040	U	ug/L	P408834	

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: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Egan Creek at Atlantic **Collection Date/Time: 01/18/2022 12:30**

Field ID: G4NE0285 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300266	EPA 180.1 Rev. 2.0	Turbidity	7.0		NTU	P408702	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P408795	
	SM 2540 D-2011	TSS	13		mg/L	P409202	
	SM 4500 F-C-2011	Fluoride	0.88		mg F/L	P408798	
2300268	EPA 350.1 Rev. 2.0	Ammonia-N	0.099		mg N/L	P409225	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P408967	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P408785	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P408761	
	SM 5310 B-2011	Organic Carbon	8.1		mg C/L	P409300	
2300270	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P408696	

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: Little St. Mary's River at White Oak Rd. **Collection Date/Time: 01/18/2022 13:55**

Field ID: G4NE0289 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300280	EPA 200.7 Rev. 4.4	Calcium	4.52		mg/L	P408754	
		Iron	760		ug/L	P408754	
		Magnesium	2.26		mg/L	P408754	
		Potassium	0.72	I	mg/L	P408754	
		Sodium	9.0		mg/L	P408754	
		Strontium	23.2		ug/L	P408754	
		Tin	3.0	U	ug/L	P408754	
		Titanium	2.1	I	ug/L	P408754	
		Vanadium	2.0	U	ug/L	P408754	
		Zinc	5.0	U	ug/L	P408754	
	EPA 200.8 Rev. 5.4	Aluminum	491		ug/L	P408754	
		Antimony	0.050	U	ug/L	P408754	
		Arsenic	0.38		ug/L	P408754	
		Barium	13.6		ug/L	P408754	
		Beryllium	0.034	I	ug/L	P408754	
		Boron**	16.8		ug/L	P408754	
		Cadmium	0.020	U	ug/L	P408754	
		Chromium	0.66	I	ug/L	P408754	
		Cobalt	0.168		ug/L	P408754	
		Copper	0.40	U	ug/L	P408754	
		Lead	0.68		ug/L	P408754	
		Manganese	10.3		ug/L	P408754	
		Molybdenum	0.15	U	ug/L	P408754	
		Nickel	0.55	I	ug/L	P408754	
		Selenium	0.20	U	ug/L	P408754	
		Silver	0.010	U	ug/L	P408754	
		Thallium	0.10	U	ug/L	P408754	
	SM 2340B	Hardness	20.6		mg/L	P408754	

Ref. Method and Comment:
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 01/25/2022.

Sample Location: Egans Creek at Jasmine St. **Collection Date/Time: 01/18/2022 12:50**

Field ID: G4NE0305 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300267	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P408702	
	SM 2320 B-2011	Total Alkalinity	150		mg CaCO3/L	P408794	
	SM 2540 D-2011	TSS	4	I	mg/L	P409202	
	SM 4500 F-C-2011	Fluoride	0.58		mg F/L	P408797	
2300269	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P409225	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P408967	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P408859	
	EPA 365.1 Rev. 2.0	Total-P	0.67		mg P/L	P408761	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P409300	
2300271	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.74		mg P/L	P408696	

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: P408702

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408703

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408754

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 200.7 Rev. 4.4
Batch ID: P408834

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	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: P408754

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Component	Result	Code	Units
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 200.8 Rev. 5.4
Batch ID: P408834

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409225

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408785

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408859

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408761

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408761

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408696

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

Reference Method: SM 2320 B-2011
Batch ID: P408794

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

Reference Method: SM 2320 B-2011
Batch ID: P408795

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

Reference Method: SM 2540 D-2011
Batch ID: P409202

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P408798

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409300

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: P408754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	109		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	104		P	85 - 115
Sodium	101		P	85 - 115
Strontium	104		P	85 - 115
Tin	110		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	105		P	85 - 115
Zinc	110		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	109		P	85 - 115
Magnesium	102		P	85 - 115
Strontium	106		P	85 - 115
Tin	107		P	85 - 115
Vanadium	106		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.5		P	85 - 115
Antimony	96.4		P	85 - 115
Arsenic	97.0		P	85 - 115
Barium	101		P	85 - 115
Beryllium	96.4		P	85 - 115
Boron	94.0		P	85 - 115
Cadmium	95.2		P	85 - 115
Chromium	97.2		P	85 - 115
Cobalt	96.8		P	85 - 115
Copper	97.8		P	85 - 115
Lead	92.3		P	85 - 115
Manganese	97.5		P	85 - 115
Molybdenum	98.1		P	85 - 115
Nickel	99.8		P	85 - 115
Selenium	98.2		P	85 - 115
Silver	97.2		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beryllium	97.1		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	103		P	85 - 115
Copper	101		P	85 - 115
Lead	100		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	102		P	85 - 115
Selenium	98.8		P	85 - 115
Silver	105		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409225

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: P408967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408859

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408761

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408696

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

Reference Method: SM 2320 B-2011
Batch ID: P408794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P408794

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

Reference Method: SM 2320 B-2011
Batch ID: P408795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P408798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299809	Calcium	105		P	80 - 120
2299809	Iron	107		P	80 - 120
2299809	Magnesium	104		P	80 - 120
2299809	Potassium	102		P	80 - 120
2299809	Sodium	101		P	80 - 120
2299809	Strontium	102		P	80 - 120
2299809	Tin	110		P	80 - 120
2299809	Titanium	105		P	80 - 120
2299809	Vanadium	106		P	80 - 120
2299809	Zinc	106		P	80 - 120
2300558	Calcium	104		P	80 - 120
2300558	Iron	108	109	P/P	80 - 120
2300558	Magnesium	100		P	80 - 120
2300558	Potassium	101	104	P/P	80 - 120
2300558	Sodium	99.9		P	80 - 120
2300558	Strontium	102	102	P/P	80 - 120
2300558	Tin	109	107	P/P	80 - 120
2300558	Titanium	105	104	P/P	80 - 120
2300558	Vanadium	107	106	P/P	80 - 120
2300558	Zinc	106	104	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299892	Iron	104	107	P/P	70 - 130
2299892	Tin	89.2	84.4	P/P	70 - 130
2299892	Vanadium	112	109	P/P	70 - 130
2299892	Zinc	103	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299809	Aluminum	96.2		P	80 - 120
2299809	Antimony	99.0		P	75 - 125
2299809	Arsenic	97.8		P	75 - 125
2299809	Barium	102		P	75 - 125
2299809	Beryllium	101		P	80 - 120
2299809	Boron	92.9		P	80 - 120
2299809	Cadmium	97.7		P	75 - 125
2299809	Chromium	98.6		P	80 - 120
2299809	Cobalt	94.3		P	80 - 120
2299809	Copper	94.7		P	75 - 125
2299809	Lead	98.5		P	75 - 125
2299809	Manganese	97.7		P	80 - 120
2299809	Molybdenum	99.4		P	75 - 125
2299809	Nickel	97.0		P	75 - 125
2299809	Selenium	96.0		P	75 - 125
2299809	Silver	94.6		P	75 - 125
2299809	Thallium	104		P	75 - 125
2300558	Aluminum	96.3	96.2	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300558	Antimony	99.8	100	P/P	80 - 120
2300558	Arsenic	99.4	100	P/P	80 - 120
2300558	Barium	103	103	P/P	80 - 120
2300558	Beryllium	99.3	101	P/P	80 - 120
2300558	Boron	91.8	92.2	P/P	80 - 120
2300558	Cadmium	97.4	97.3	P/P	80 - 120
2300558	Chromium	98.9	99.5	P/P	80 - 120
2300558	Cobalt	97.2	97.7	P/P	80 - 120
2300558	Copper	97.1	96.5	P/P	80 - 120
2300558	Lead	100	99.5	P/P	80 - 120
2300558	Manganese	98.4	98.9	P/P	80 - 120
2300558	Molybdenum	102	101	P/P	80 - 120
2300558	Nickel	99.9	99.4	P/P	80 - 120
2300558	Selenium	97.1	99.8	P/P	80 - 120
2300558	Silver	94.7	94.1	P/P	80 - 120
2300558	Thallium	105	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299892	Aluminum	96.0	108	P/P	70 - 130
2299892	Antimony	96.8	89.4	P/P	70 - 130
2299892	Arsenic	104	95.7	P/P	70 - 130
2299892	Beryllium	102	94.1	P/P	70 - 130
2299892	Cadmium	91.1	84.2	P/P	70 - 130
2299892	Chromium	95.6	88.3	P/P	70 - 130
2299892	Cobalt	107	97.5	P/P	70 - 130
2299892	Copper	98.4	91.4	P/P	70 - 130
2299892	Lead	98.9	89.6	P/P	70 - 130
2299892	Manganese	90.0	80.0	P/P	70 - 130
2299892	Molybdenum	104	94.5	P/P	70 - 130
2299892	Nickel	104	96.5	P/P	70 - 130
2299892	Selenium	97.5	88.4	P/P	70 - 130
2299892	Silver	88.7	81.3	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300112	Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300264	Kjeldahl Nitrogen	97.5	110	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300264	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300269	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300686	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300260	O-Phosphate-P	98.9	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300414	Fluoride	97.5	96.9	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P408798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299867	Fluoride	98.4	97.7	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300730	Organic Carbon	90.0	90.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300466	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300127	Turbidity	3.97	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300558	Calcium	0.288	Spike	P	0 - 20
2300558	Iron	1.07	Spike	P	0 - 20
2300558	Magnesium	1.56	Spike	P	0 - 20
2300558	Potassium	1.68	Spike	P	0 - 20
2300558	Sodium	0.458	Spike	P	0 - 20
2300558	Strontium	0.337	Spike	P	0 - 20
2300558	Tin	1.68	Spike	P	0 - 20
2300558	Titanium	1.06	Spike	P	0 - 20
2300558	Vanadium	1.06	Spike	P	0 - 20
2300558	Zinc	1.44	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299892	Calcium	4.16	Spike	P	0 - 20
2299892	Iron	2.74	Spike	P	0 - 20
2299892	Magnesium	1.49	Spike	P	0 - 20
2299892	Strontium	3.81	Spike	P	0 - 20
2299892	Tin	5.56	Spike	P	0 - 20
2299892	Vanadium	3.00	Spike	P	0 - 20
2299892	Zinc	0.885	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300558	Aluminum	0.114	Spike	P	0 - 20
2300558	Antimony	0.226	Spike	P	0 - 20
2300558	Arsenic	0.843	Spike	P	0 - 20
2300558	Barium	0.406	Spike	P	0 - 20
2300558	Beryllium	1.51	Spike	P	0 - 20
2300558	Boron	0.334	Spike	P	0 - 20
2300558	Cadmium	0.0208	Spike	P	0 - 20
2300558	Chromium	0.584	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300558	Cobalt	0.482	Spike	P	0 - 20
2300558	Copper	0.623	Spike	P	0 - 20
2300558	Lead	0.722	Spike	P	0 - 20
2300558	Manganese	0.335	Spike	P	0 - 20
2300558	Molybdenum	0.645	Spike	P	0 - 20
2300558	Nickel	0.436	Spike	P	0 - 20
2300558	Selenium	2.71	Spike	P	0 - 20
2300558	Silver	0.624	Spike	P	0 - 20
2300558	Thallium	0.426	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299892	Aluminum	11.0	Spike	P	0 - 20
2299892	Antimony	7.93	Spike	P	0 - 20
2299892	Arsenic	8.22	Spike	P	0 - 20
2299892	Beryllium	7.99	Spike	P	0 - 20
2299892	Cadmium	7.98	Spike	P	0 - 20
2299892	Chromium	7.95	Spike	P	0 - 20
2299892	Cobalt	9.10	Spike	P	0 - 20
2299892	Copper	7.44	Spike	P	0 - 20
2299892	Lead	9.78	Spike	P	0 - 20
2299892	Manganese	8.24	Spike	P	0 - 20
2299892	Molybdenum	8.15	Spike	P	0 - 20
2299892	Nickel	7.53	Spike	P	0 - 20
2299892	Selenium	9.69	Spike	P	0 - 20
2299892	Silver	8.75	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300112	Ammonia-N	0.667	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300264	Kjeldahl Nitrogen	10.1	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300264	NO2NO3-N	0.760	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300269	NO2NO3-N	0.652	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300686	Total-P	1.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300260	O-Phosphate-P	0.751	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P408794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300414	Total Alkalinity	4.54	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P408795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299867	Total Alkalinity	3.55	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300414	Fluoride	0.490	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P408798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299867	Fluoride	0.487	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300730	Organic Carbon	0.463	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A109926
Included Lab Sample IDs: 2300265, 2300270, 2300271

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A109929
Included Lab Sample IDs: 2300263, 2300266, 2300267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	97.5	P/P	95 - 105
Turbidity	99.0	98.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A109970
Included Lab Sample IDs: 2300264, 2300268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A109978
Included Lab Sample IDs: 2300263, 2300266, 2300267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.8	97.0	P/P	90 - 110
Total Alkalinity	98.3	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A109978
Included Lab Sample IDs: 2300263, 2300266, 2300267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110
Fluoride	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A109990
Included Lab Sample IDs: 2300280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.9	98.0	P/P	90 - 110
Antimony	97.5	97.5	P/P	90 - 110
Arsenic	98.8	95.8	P/P	90 - 110
Barium	98.0	97.7	P/P	90 - 110
Boron	94.8	94.2	P/P	90 - 110
Cadmium	95.9	95.9	P/P	90 - 110
Chromium	96.6	96.3	P/P	90 - 110
Cobalt	94.6	92.9	P/P	90 - 110
Copper	98.3	95.7	P/P	90 - 110
Manganese	97.5	97.9	P/P	90 - 110
Molybdenum	97.4	95.8	P/P	90 - 110
Nickel	99.1	96.1	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A109990
Included Lab Sample IDs: 2300280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	96.9	97.4	P/P	90 - 110
Silver	96.7	95.5	P/P	90 - 110
Thallium	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110002
Included Lab Sample IDs: 2300269

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110009
Included Lab Sample IDs: 2300264, 2300268, 2300269

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110014
Included Lab Sample IDs: 2300280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	94.3	92.3	P/P	90 - 110
Lead	97.1	96.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110020
Included Lab Sample IDs: 2300280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	98.9	99.2	P/P	90 - 110
Sodium	99.7	101	P/P	90 - 110
Strontium	102	103	P/P	90 - 110
Tin	104	105	P/P	90 - 110
Titanium	101	102	P/P	90 - 110
Vanadium	102	103	P/P	90 - 110
Zinc	105	107	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110039
Included Lab Sample IDs: 2300279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	103	P/P	90 - 110
Antimony	99.4	102	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Beryllium	104	109	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110039
Included Lab Sample IDs: 2300279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	97.6	98.5	P/P	90 - 110
Chromium	98.3	101	P/P	90 - 110
Cobalt	103	105	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Lead	93.5	93.7	P/P	90 - 110
Manganese	99.3	102	P/P	90 - 110
Molybdenum	97.8	98.1	P/P	90 - 110
Nickel	104	106	P/P	90 - 110
Selenium	99.0	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A110045
Included Lab Sample IDs: 2300279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	98.4	P/P	90 - 110
Iron	102	99.9	P/P	90 - 110
Magnesium	101	99.2	P/P	90 - 110
Strontium	104	104	P/P	90 - 110
Tin	103	102	P/P	90 - 110
Vanadium	102	102	P/P	90 - 110
Zinc	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110097
Included Lab Sample IDs: 2300264, 2300268, 2300269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110133
Included Lab Sample IDs: 2300264, 2300268, 2300269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.4	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110168
Included Lab Sample IDs: 2300264, 2300268, 2300269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110
Organic Carbon	96.0	94.0	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.19	
	Turbidity						3.97	
EPA 200.7 Rev. 4.4	Calcium	107	105	104				0.288
	Calcium	102						4.16
	Iron	109	107	108	109			1.07
	Iron	109	104	107				2.74
	Magnesium	105	104	100				1.56
	Magnesium	102						1.49
	Potassium	104	104	102	101			1.68
	Sodium	101	101	99.9				0.458
	Strontium	104	102	102	102			0.337
	Strontium	106						3.81
	Tin	110	110	109	107			1.68
	Tin	107	89.2	84.4				5.56
	Titanium	104	105	105	104			1.06
	Vanadium	105	106	107	106			1.06
	Vanadium	106	112	109				3.00
	Zinc	110	106	106	104			1.44
	Zinc	106	103	102				0.885
EPA 200.8 Rev. 5.4	Aluminum	98.5	96.3	96.2	96.2			0.114
	Aluminum	102	96.0	108				11.0
	Antimony	96.4	99.8	100	99.0			0.226
	Antimony	101	96.8	89.4				7.93
	Arsenic	97.0	99.4	100	97.8			0.843
	Arsenic	101	104	95.7				8.22
	Barium	101	103	103	102			0.406
	Beryllium	96.4	99.3	101	101			1.51
	Beryllium	97.1	102	94.1				7.99
	Boron	94.0	91.8	92.2	92.9			0.334
	Cadmium	95.2	97.4	97.3	97.7			0.0208
	Cadmium	102	91.1	84.2				7.98
	Chromium	97.2	98.9	99.5	98.6			0.584
	Chromium	102	95.6	88.3				7.95
	Cobalt	96.8	97.2	97.7	94.3			0.482
	Cobalt	103	107	97.5				9.10
	Copper	97.8	97.1	96.5	94.7			0.623
	Copper	101	98.4	91.4				7.44
	Lead	92.3	100	99.5	98.5			0.722
	Lead	100	98.9	89.6				9.78
	Manganese	97.5	98.4	98.9	97.7			0.335
	Manganese	100	90.0	80.0				8.24
	Molybdenum	98.1	102	101	99.4			0.645
	Molybdenum	102	104	94.5				8.15
	Nickel	99.8	99.9	99.4	97.0			0.436
	Nickel	102	104	96.5				7.53
	Selenium	98.2	97.1	99.8	96.0			2.71
	Selenium	98.8	97.5	88.4				9.69
	Silver	97.2	94.7	94.1	94.6			0.624
	Silver	105	88.7	81.3				8.75
	Thallium	102	105	106	104			0.426
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	99.6	100				0.667
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.5	110				10.1
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	102				0.760
	NO2NO3-N	102	100	102				0.652

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0	Total-P	108	104	106			1.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.9	99.8			0.751
SM 2320 B-2011	Total Alkalinity	98.6				4.54	
	Total Alkalinity	99.5				3.55	
SM 4500 F-C-2011	Fluoride	97.5	97.5	96.9			0.490
	Fluoride	98.9	98.4	97.7			0.487
SM 5310 B-2011	Organic Carbon	93.8	90.0	90.4			0.463

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2300263, 2300266, 2300267
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2300279, 2300280
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2300279, 2300280
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2300264, 2300268, 2300269
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2300264, 2300268, 2300269
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2300264, 2300268, 2300269
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2300264, 2300268, 2300269
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2300265, 2300270, 2300271
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2300263, 2300266, 2300267
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2300280
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2300263, 2300266, 2300267
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2300263, 2300266, 2300267
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2300264, 2300268, 2300269

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	01/19/2022			01/19/2022 14:57	Sarah A Nixon	2300263, 2300266, 2300267
EPA 200.7 Rev. 4.4	01/19/2022	01/21/2022 09:47	Emily M Philpot	01/24/2022 18:29	Josef B Mick	2300280
	01/19/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 21:06	Josef B Mick	2300279
	01/19/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 21:14	Josef B Mick	2300279
EPA 200.8 Rev. 5.4	01/19/2022	01/21/2022 09:47	Emily M Philpot	01/21/2022 18:06	Alexander Thompson	2300280
	01/19/2022	01/21/2022 09:47	Emily M Philpot	01/24/2022 15:11	Alexander Thompson	2300280
	01/19/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 21:52	McKinley C Carter	2300279
EPA 350.1 Rev. 2.0	01/19/2022			01/31/2022 14:56	Ping Hua	2300264
	01/19/2022			01/31/2022 14:57	Ping Hua	2300268
	01/19/2022			01/31/2022 14:59	Ping Hua	2300269
EPA 351.2 Rev. 2.0	01/19/2022	01/27/2022 10:17	Samantha L Bates	01/28/2022 10:50	Alexandra J Mattheus	2300264
	01/19/2022	01/27/2022 10:17	Samantha L Bates	01/28/2022 10:55	Alexandra J Mattheus	2300268
	01/19/2022	01/27/2022 10:17	Samantha L Bates	01/28/2022 10:56	Alexandra J Mattheus	2300269
EPA 353.2 Rev. 2.0	01/19/2022			01/21/2022 10:57	Beverly Y. Sanders	2300264
	01/19/2022			01/21/2022 11:13	Beverly Y. Sanders	2300268
	01/19/2022			01/24/2022 10:12	Beverly Y. Sanders	2300269
EPA 365.1 Rev. 2.0	01/19/2022	01/21/2022 15:10	Simonne.V. Calhoun	01/24/2022 11:23	Shengyu Ding	2300264
	01/19/2022	01/21/2022 15:10	Simonne.V. Calhoun	01/24/2022 11:24	Shengyu Ding	2300268
	01/19/2022	01/21/2022 15:10	Simonne.V. Calhoun	01/24/2022 11:25	Shengyu Ding	2300269
EPA 365.1 Rev. 2.0 dissolved	01/19/2022			01/19/2022 15:09	James L Waggerby	2300265
	01/19/2022			01/19/2022 15:11	James L Waggerby	2300270
	01/19/2022			01/19/2022 15:16	James L Waggerby	2300271
SM 2320 B-2011	01/19/2022			01/21/2022 02:51	Dale L. Simmons	2300267
	01/19/2022			01/21/2022 07:20	Dale L. Simmons	2300263
	01/19/2022			01/21/2022 07:34	Dale L. Simmons	2300266
SM 2340B	01/19/2022			01/24/2022 18:29	Josef B Mick	2300280
SM 2540 D-2011	01/19/2022			01/21/2022 15:02	Yijie Li	2300263, 2300266, 2300267
SM 4500 F-C-2011	01/19/2022			01/21/2022 02:51	Dale L. Simmons	2300267
	01/19/2022			01/21/2022 06:01	Dale L. Simmons	2300263
	01/19/2022			01/21/2022 06:06	Dale L. Simmons	2300266
SM 5310 B-2011	01/19/2022			02/01/2022 16:49	Nathaniel J Jones	2300264
	01/19/2022			02/01/2022 18:01	Nathaniel J Jones	2300268
	01/19/2022			02/01/2022 18:55	Nathaniel J Jones	2300269