

Chemical Analysis Report

NW-DIST-2021-08-18-01

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

Event Description: **Milton East Run**
Request ID: **RQ-2021-08-16-18**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 14-SEP-2021 11:57

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Ates Creek Upstream of Fish Hatchery Road

Collection Date/Time: 08/17/2021 10:00

Field ID: G4NW0525

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270063	EPA 200.7 Rev. 4.4	Barium	10.9		ug/L	P402644	
		Calcium	1.04		mg/L	P402644	
		Iron	690		ug/L	P402644	
		Magnesium	0.58		mg/L	P402644	
		Manganese	26.1		ug/L	P402644	
		Potassium	0.41	I	mg/L	P402644	
		Sodium	3.3		mg/L	P402644	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P402644	
		Aluminum	46		ug/L	P402644	
		Antimony	0.050	U	ug/L	P402644	
		Arsenic	0.21		ug/L	P402644	
		Beryllium	0.014	I	ug/L	P402644	
		Boron**	10.9		ug/L	P402644	
		Cadmium	0.020	U	ug/L	P402644	
		Chromium	0.40	U	ug/L	P402644	
		Copper	0.40	U	ug/L	P402644	
		Lead	0.20	U	ug/L	P402644	
		Nickel	0.50	U	ug/L	P402644	
		Selenium	0.20	U	ug/L	P402644	
		Silver	0.010	U	ug/L	P402644	
		Thallium	0.10	U	ug/L	P402644	
	SM 2340B	Hardness	5.0		mg/L	P402644	

Sample Location: Collins Mill Creek Upstream of Conecuh Street Collection Date/Time: 08/17/2021 09:15

Field ID: G4NW0507

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270010	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P402997	
		Sulfate	1.4		mg SO4/L	P403000	
		Color (true)	10		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P402803	
	SM 2540 C-2011	TDS	24	I	mg/L	P403216	
	SM 2540 D-2011	TSS	3	I	mg/L	P403195	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402805	
2270011	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P402908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P402812	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	1.8		mg C/L	P403117	
2270012	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	

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: Big Coldwater Creek Upstream of Hwy 4

Collection Date/Time: 08/17/2021 11:07

Field ID: G4NW0502

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270001	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P402997	
		Sulfate	0.58		mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	27		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	3.9		mg CaCO3/L	P402803	
	SM 2540 C-2011	TDS	38		mg/L	P403215	
	SM 2540 D-2011	TSS	3	I	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402805	
2270004	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P402908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.3		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P403117	
2270007	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	

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: Big Coldwater Creek West Fork Upstream of Walling Rd.

Collection Date/Time: 08/17/2021 11:55

Field ID: G4NW0436

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269995	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P402997	
		Sulfate	1.6		mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	21		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	4.8		mg CaCO3/L	P402802	
	SM 2540 C-2011	TDS	41		mg/L	P403216	
	SM 2540 D-2011	TSS	8	I	mg/L	P403195	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402804	
2269997	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P402877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	2.3		mg C/L	P403117	
2269999	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	
2270061	EPA 200.7 Rev. 4.4	Barium	64.4		ug/L	P402644	
		Calcium	3.13		mg/L	P402644	
		Iron	490		ug/L	P402644	
		Magnesium	2.14		mg/L	P402644	
		Manganese	40.4		ug/L	P402644	
		Potassium	1.3		mg/L	P402644	
		Sodium	2.5		mg/L	P402644	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P402644	
		Aluminum	110		ug/L	P402644	
		Antimony	0.050	U	ug/L	P402644	
		Arsenic	0.30		ug/L	P402644	
		Beryllium	0.059		ug/L	P402644	
		Boron**	17.6		ug/L	P402644	
		Cadmium	0.020	U	ug/L	P402644	
		Chromium	0.40	U	ug/L	P402644	
		Copper	0.40	U	ug/L	P402644	
		Lead	0.21	I	ug/L	P402644	
		Nickel	0.56	I	ug/L	P402644	
		Selenium	0.20	U	ug/L	P402644	
		Silver	0.010	U	ug/L	P402644	
		Thallium	0.10	U	ug/L	P402644	
	SM 2340B	Hardness	16.6		mg/L	P402644	

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: Manning Creek Upstream of Manning Creek Rd.

Collection Date/Time: 08/17/2021 12:20

Field ID: G4NW0435

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270002	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P402997	
		Sulfate	0.57		mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	27		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	3.1		mg CaCO3/L	P402803	
	SM 2540 C-2011	TDS	33		mg/L	P403215	
	SM 2540 D-2011	TSS	5	I	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402805	
2270005	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P402908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.5		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	2.7		mg C/L	P403117	
2270008	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	

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: Bear Creek @ Forest Rd. 0.7 Miles West of Bear Lake **Collection Date/Time: 08/17/2021 10:30**

Field ID: G4NW0380

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269996	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P402997	
		Sulfate	0.33	I	mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	48	A	PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	4.1		mg CaCO3/L	P402803	
	SM 2540 C-2011	TDS	21	I	mg/L	P403215	
	SM 2540 D-2011	TSS	4	I	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402805	
2269998	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P402908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P403117	
2270000	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	
2270062	EPA 200.7 Rev. 4.4	Barium	9.9		ug/L	P402644	
		Calcium	1.24		mg/L	P402644	
		Iron	1.32E+03		ug/L	P402644	
		Magnesium	0.53		mg/L	P402644	
		Manganese	43.6		ug/L	P402644	
		Potassium	0.30	U	mg/L	P402644	
		Sodium	1.6	I	mg/L	P402644	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P402644	
		Aluminum	54		ug/L	P402644	
		Antimony	0.050	U	ug/L	P402644	
		Arsenic	0.55		ug/L	P402644	
		Beryllium	0.015	I	ug/L	P402644	
		Boron**	9.0		ug/L	P402644	
		Cadmium	0.020	U	ug/L	P402644	
		Chromium	0.40	U	ug/L	P402644	
		Copper	0.40	U	ug/L	P402644	
		Lead	0.20	U	ug/L	P402644	
		Nickel	0.50	U	ug/L	P402644	
		Selenium	0.20	U	ug/L	P402644	
		Silver	0.010	U	ug/L	P402644	
		Thallium	0.10	U	ug/L	P402644	
	SM 2340B	Hardness	5.3		mg/L	P402644	

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: Manning Creek at Whitfield Road (North Side) Collection Date/Time: 08/17/2021 11:30

Field ID: G4NW0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270003	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P402997	
		Sulfate	0.39	I	mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	52		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P402803	
	SM 2540 C-2011	TDS	28		mg/L	P403216	
	SM 2540 D-2011	TSS	6	I	mg/L	P403195	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402805	
2270006	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P402908	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P403179	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P402812	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P402924	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P403117	
2270009	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402650	

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: P402658

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402644

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402644

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402908

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403179

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402812

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402924

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

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

Reference Method: SM 2120 B-2011
Batch ID: P402655

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P402802

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

Reference Method: SM 2320 B-2011
Batch ID: P402803

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P403215

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P403216

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403194

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403195

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402805

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403117

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: P402644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	108		P	85 - 115
Calcium	107		P	85 - 115
Iron	109		P	85 - 115
Magnesium	109		P	85 - 115
Manganese	104		P	85 - 115
Potassium	105		P	85 - 115
Sodium	104		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	98.3		P	85 - 115
Beryllium	96.2		P	85 - 115
Boron	103		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	97.2		P	85 - 115
Copper	97.2		P	85 - 115
Lead	101		P	85 - 115
Nickel	97.1		P	85 - 115
Selenium	97.3		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402997

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403000

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402908

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403179

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: P402811

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402812

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402924

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

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

Reference Method: SM 2120 B-2011
Batch ID: P402655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P402802

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

Reference Method: SM 2320 B-2011
Batch ID: P402803

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

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P402805

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

Reference Method: SM 5310 B-2011
Batch ID: P403117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269481	Barium	110	109	P/P	80 - 120
2269481	Calcium	107	109	P/P	80 - 120
2269481	Iron	110	110	P/P	80 - 120
2269481	Magnesium	110	111	P/P	80 - 120
2269481	Manganese	106	106	P/P	80 - 120
2269481	Potassium	105	108	P/P	80 - 120
2269481	Sodium	103		P	80 - 120
2269481	Zinc	107	106	P/P	80 - 120
2269912	Barium	107		P	80 - 120
2269912	Calcium	100		P	80 - 120
2269912	Iron	109		P	80 - 120
2269912	Magnesium	106		P	80 - 120
2269912	Manganese	104		P	80 - 120
2269912	Potassium	105		P	80 - 120
2269912	Sodium	102		P	80 - 120
2269912	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269481	Aluminum	101	102	P/P	80 - 120
2269481	Antimony	102	105	P/P	80 - 120
2269481	Arsenic	99.2	99.6	P/P	80 - 120
2269481	Beryllium	99.8	99.8	P/P	80 - 120
2269481	Boron	106	106	P/P	80 - 120
2269481	Cadmium	102	103	P/P	80 - 120
2269481	Chromium	98.4	100	P/P	80 - 120
2269481	Copper	97.3	99.0	P/P	80 - 120
2269481	Lead	103	104	P/P	80 - 120
2269481	Nickel	96.9	97.9	P/P	80 - 120
2269481	Selenium	96.7	98.1	P/P	80 - 120
2269481	Silver	103	105	P/P	80 - 120
2269481	Thallium	105	107	P/P	80 - 120
2269912	Aluminum	102		P	80 - 120
2269912	Antimony	104		P	80 - 120
2269912	Arsenic	99.3		P	80 - 120
2269912	Beryllium	95.5		P	80 - 120
2269912	Boron	110		P	80 - 120
2269912	Cadmium	103		P	80 - 120
2269912	Chromium	101		P	80 - 120
2269912	Copper	98.0		P	80 - 120
2269912	Lead	103		P	80 - 120
2269912	Nickel	99.8		P	80 - 120
2269912	Selenium	96.8		P	80 - 120
2269912	Silver	104		P	80 - 120
2269912	Thallium	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402997

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269888	Chloride	98.3		P	90 - 110
2270130	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269888	Sulfate	99.0		P	90 - 110
2270130	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269927	Ammonia-N	92.6	92.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270004	Ammonia-N	91.6	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270005	Kjeldahl Nitrogen	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269943	NO2NO3-N	96.2	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270006	NO2NO3-N	98.3	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269998	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270008	O-Phosphate-P	101	102	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269861	Fluoride	99.8	99.8	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P402805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270130	Fluoride	100	99.9	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270134	Organic Carbon	96.6	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P402658

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269942	Turbidity	7.71	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402644

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269481	Barium	0.228	Spike	P	0 - 20
2269481	Calcium	1.14	Spike	P	0 - 20
2269481	Iron	0.616	Spike	P	0 - 20
2269481	Magnesium	1.02	Spike	P	0 - 20
2269481	Manganese	0.0902	Spike	P	0 - 20
2269481	Potassium	1.79	Spike	P	0 - 20
2269481	Sodium	1.15	Spike	P	0 - 20
2269481	Zinc	0.492	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402644

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269481	Aluminum	0.889	Spike	P	0 - 20
2269481	Antimony	2.64	Spike	P	0 - 20
2269481	Arsenic	0.369	Spike	P	0 - 20
2269481	Beryllium	0.000884	Spike	P	0 - 20
2269481	Boron	0.0757	Spike	P	0 - 20
2269481	Cadmium	1.54	Spike	P	0 - 20
2269481	Chromium	2.08	Spike	P	0 - 20
2269481	Copper	1.73	Spike	P	0 - 20
2269481	Lead	1.08	Spike	P	0 - 20
2269481	Nickel	0.989	Spike	P	0 - 20
2269481	Selenium	1.40	Spike	P	0 - 20
2269481	Silver	2.46	Spike	P	0 - 20
2269481	Thallium	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402997

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Chloride	0.571	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403000

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Sulfate	0.707	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269927	Ammonia-N	0.156	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270004	Ammonia-N	1.58	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270005	Kjeldahl Nitrogen	0.824	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269943	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270006	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269998	Total-P	0.182	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270008	O-Phosphate-P	0.0986	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P402655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269996	Color (true)	0.227	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P402802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269861	Total Alkalinity	1.22	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P402803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Total Alkalinity	0.888	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P403215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269945	TDS	9.56	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P403216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269861	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P402805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Fluoride	0.469	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270134	Organic Carbon	0.205	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107319

Included Lab Sample IDs: 2269999, 2270000, 2270007, 2270008, 2270009, 2270012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.7	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A107322

Included Lab Sample IDs: 2269995, 2269996, 2270001, 2270002, 2270003, 2270010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107323

Included Lab Sample IDs: 2269995, 2269996, 2270001, 2270002, 2270003, 2270010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107373

Included Lab Sample IDs: 2270061, 2270062, 2270063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	100	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	96.3	94.1	P/P	90 - 110
Beryllium	92.8	92.0	P/P	90 - 110
Boron	108	107	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	96.3	94.7	P/P	90 - 110
Copper	94.5	92.0	P/P	90 - 110
Lead	98.9	98.6	P/P	90 - 110
Nickel	94.3	91.3	P/P	90 - 110
Selenium	99.1	97.5	P/P	90 - 110
Silver	97.8	97.9	P/P	90 - 110
Thallium	102	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107380

Included Lab Sample IDs: 2269995, 2269996, 2270001, 2270002, 2270003, 2270010

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

Reference Method: SM 4500 F-C-2011

Run ID: A107380

Included Lab Sample IDs: 2269995, 2269996, 2270001, 2270002, 2270003, 2270010

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107385

Included Lab Sample IDs: 2269997, 2269998, 2270004, 2270005, 2270006, 2270011

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107416

Included Lab Sample IDs: 2270061, 2270062, 2270063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	98.1	P/P	90 - 110
Calcium	100	97.4	P/P	90 - 110
Iron	101	98.3	P/P	90 - 110
Magnesium	100	97.3	P/P	90 - 110
Manganese	98.8	98.3	P/P	90 - 110
Potassium	102	99.3	P/P	90 - 110
Sodium	101	98.2	P/P	90 - 110
Zinc	97.2	95.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107428

Included Lab Sample IDs: 2269997, 2269998, 2270004, 2270005, 2270006, 2270011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.0	P/P	90 - 110
Ammonia-N	98.3	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107449

Included Lab Sample IDs: 2269995, 2269996, 2270001, 2270002, 2270003, 2270010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.2	P/P	90 - 110
Chloride	99.2	98.9	P/P	90 - 110
Sulfate	99.2	99.4	P/P	90 - 110
Sulfate	99.3	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107510

Included Lab Sample IDs: 2269997, 2269998, 2270005, 2270006, 2270011

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

Reference Method: SM 5310 B-2011

Run ID: A107529

Included Lab Sample IDs: 2269997, 2269998, 2270004, 2270005, 2270006, 2270011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	96.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107570

Included Lab Sample IDs: 2270004

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107598

Included Lab Sample IDs: 2269997, 2269998, 2270004, 2270005, 2270006, 2270011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	106	P/P	90 - 110
Kjeldahl Nitrogen	106	101	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				
EPA 180.1 Rev. 2.0	Turbidity					7.71	
EPA 200.7 Rev. 4.4	Barium	108	110	109	107		0.228
	Calcium	107	107	109	100		1.14
	Iron	109	110	110	109		0.616
	Magnesium	109	110	111	106		1.02
	Manganese	104	106	106	104		0.0902
	Potassium	105	105	108	105		1.79
	Sodium	104	103	102			1.15
	Zinc	104	107	106	106		0.492
EPA 200.8 Rev. 5.4	Aluminum	100	102	102	101		0.889
	Antimony	102	102	105	104		2.64
	Arsenic	98.3	99.2	99.6	99.3		0.369
	Beryllium	96.2	99.8	99.8	95.5		0.0008
	Boron	103	106	106	110		0.0757
	Cadmium	101	102	103	103		1.54
	Chromium	97.2	98.4	100	101		2.08
	Copper	97.2	97.3	99.0	98.0		1.73
	Lead	101	103	104	103		1.08
	Nickel	97.1	96.9	97.9	99.8		0.989
	Selenium	97.3	96.7	98.1	96.8		1.40
	Silver	104	103	105	104		2.46
	Thallium	103	105	107	108		1.80
EPA 300.0 Rev. 2.1	Chloride	100	99.2	98.3		0.571	
	Sulfate	100	99.2	99.0		0.707	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	92.6	92.8			0.156
	Ammonia-N	94.4	91.6	93.4			1.58
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	102	103			0.824
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	96.2	96.6			0.482
	NO ₂ NO ₃ -N	99.5	98.3	98.3			0.0
EPA 365.1 Rev. 2.0	Total-P	107	107	107			0.182
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	101	102			0.0986
SM 2120 B-2011	Color (true)	103				0.227	
SM 2320 B-2011	Total Alkalinity	102				1.22	
	Total Alkalinity	102				0.888	
SM 2540 C-2011	TDS					9.56	
	TDS					0.0	
SM 4500 F-C-2011	Fluoride	98.5	99.8	99.8			0.0
	Fluoride	101	100	99.9			0.469
SM 5310 B-2011	Organic Carbon	95.0	96.6	96.3			0.205

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2270061, 2270062, 2270063
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2270061, 2270062, 2270063
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2269995, 2269996, 2270001, 2270002, 2270003, 2270010

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2269997, 2269998, 2270004, 2270005, 2270006, 2270011
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2269997, 2269998, 2270004, 2270005, 2270006, 2270011
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2269997, 2269998, 2270004, 2270005, 2270006, 2270011
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2269997, 2269998, 2270004, 2270005, 2270006, 2270011
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2269999, 2270000, 2270007, 2270008, 2270009, 2270012
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2270061, 2270062, 2270063
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2269997, 2269998, 2270004, 2270005, 2270006, 2270011

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	08/18/2021			08/18/2021 15:34	Sarah A Nixon	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
EPA 200.7 Rev. 4.4	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/24/2021 02:55	Josef B Mick	2270061
	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/24/2021 03:01	Josef B Mick	2270062
	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/24/2021 03:07	Josef B Mick	2270063
EPA 200.8 Rev. 5.4	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/20/2021 16:41	Alexander Thompson	2270061
	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/20/2021 16:51	Alexander Thompson	2270062
	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/20/2021 17:00	Alexander Thompson	2270063
EPA 300.0 Rev. 2.1	08/18/2021			08/25/2021 22:14	Lipi Saha	2269995
	08/18/2021			08/25/2021 22:26	Lipi Saha	2269996
	08/18/2021			08/25/2021 23:02	Lipi Saha	2270001
	08/18/2021			08/25/2021 23:14	Lipi Saha	2270002
	08/18/2021			08/25/2021 23:27	Lipi Saha	2270003
	08/18/2021			08/25/2021 23:39	Lipi Saha	2270010
EPA 350.1 Rev. 2.0	08/18/2021			08/24/2021 12:32	Roberta Tatti	2269997
	08/18/2021			08/24/2021 13:49	Roberta Tatti	2270004
	08/18/2021			08/24/2021 13:53	Roberta Tatti	2269998
	08/18/2021			08/24/2021 13:54	Roberta Tatti	2270005
	08/18/2021			08/24/2021 13:55	Roberta Tatti	2270006
	08/18/2021			08/24/2021 13:57	Roberta Tatti	2270011
EPA 351.2 Rev. 2.0	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 11:54	Alexandra J Mattheus	2269997
	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 11:56	Alexandra J Mattheus	2269998
	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 12:01	Alexandra J Mattheus	2270004
	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 12:02	Alexandra J Mattheus	2270005
	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 12:07	Alexandra J Mattheus	2270006
	08/18/2021	08/31/2021 10:12	Benjamin T. Nordmann	09/01/2021 12:09	Alexandra J Mattheus	2270011
EPA 353.2 Rev. 2.0	08/18/2021			08/23/2021 10:04	Beverly Y. Sanders	2270006
	08/18/2021			08/23/2021 10:10	Beverly Y. Sanders	2270011
	08/18/2021			08/23/2021 10:44	Beverly Y. Sanders	2269997
	08/18/2021			08/23/2021 10:46	Beverly Y. Sanders	2269998
	08/18/2021			08/23/2021 10:47	Beverly Y. Sanders	2270004
	08/18/2021			08/23/2021 10:48	Beverly Y. Sanders	2270005
EPA 365.1 Rev. 2.0	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/27/2021 14:25	Shengyu Ding	2269998
	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/27/2021 14:26	Shengyu Ding	2269997
	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/27/2021 14:28	Shengyu Ding	2270005
	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/27/2021 14:29	Shengyu Ding	2270006
	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/27/2021 14:30	Shengyu Ding	2270011
	08/18/2021	08/25/2021 14:45	Simonne.V. Calhoun	08/31/2021 13:52	Shengyu Ding	2270004
EPA 365.1 Rev. 2.0 dissolved	08/18/2021			08/18/2021 15:24	James L Waggeberby	2270008
	08/18/2021			08/18/2021 15:28	James L Waggeberby	2269999

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	08/18/2021			08/18/2021 15:29	James L Waggeberby	2270000
	08/18/2021			08/18/2021 15:30	James L Waggeberby	2270007
	08/18/2021			08/18/2021 15:31	James L Waggeberby	2270009, 2270012
SM 2120 B-2011	08/18/2021			08/18/2021 16:16	Sarah A Nixon	2269996
	08/18/2021			08/18/2021 16:18	Sarah A Nixon	2269995
	08/18/2021			08/18/2021 16:19	Sarah A Nixon	2270001
	08/18/2021			08/18/2021 16:20	Sarah A Nixon	2270002
	08/18/2021			08/18/2021 16:21	Sarah A Nixon	2270003, 2270010
SM 2320 B-2011	08/18/2021			08/19/2021 20:32	Dale L. Simmons	2269995
	08/18/2021			08/19/2021 21:51	Dale L. Simmons	2269996
	08/18/2021			08/19/2021 22:01	Dale L. Simmons	2270001
	08/18/2021			08/19/2021 22:10	Dale L. Simmons	2270002
	08/18/2021			08/19/2021 22:19	Dale L. Simmons	2270003
SM 2340B	08/18/2021			08/19/2021 22:31	Dale L. Simmons	2270010
	08/18/2021			08/24/2021 02:55	Josef B Mick	2270061
	08/18/2021			08/24/2021 03:01	Josef B Mick	2270062
SM 2540 C-2011	08/18/2021			08/24/2021 03:07	Josef B Mick	2270063
	08/18/2021			08/23/2021 15:36	Yijie Li	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 2540 D-2011	08/18/2021			08/23/2021 15:36	Yijie Li	2269995, 2269996, 2270001, 2270002, 2270003, 2270010
SM 4500 F-C-2011	08/18/2021			08/19/2021 20:32	Dale L. Simmons	2269995
	08/18/2021			08/19/2021 21:51	Dale L. Simmons	2269996
	08/18/2021			08/19/2021 22:01	Dale L. Simmons	2270001
	08/18/2021			08/19/2021 22:10	Dale L. Simmons	2270002
	08/18/2021			08/19/2021 22:19	Dale L. Simmons	2270003
SM 5310 B-2011	08/18/2021			08/19/2021 22:31	Dale L. Simmons	2270010
	08/18/2021			08/28/2021 04:01	Madeline Gruver	2269997
	08/18/2021			08/28/2021 04:16	Madeline Gruver	2269998
	08/18/2021			08/28/2021 04:34	Madeline Gruver	2270004
	08/18/2021			08/28/2021 04:51	Madeline Gruver	2270005
	08/18/2021			08/28/2021 05:09	Madeline Gruver	2270006
	08/18/2021			08/28/2021 05:21	Madeline Gruver	2270011