

Chemical Analysis Report

NE-DIST-2020-03-04-01

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

Event Description: **Melrose Lakes**
Request ID: **RQ-2020-03-02-28**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 24-MAR-2020 13:52



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: Ross Lake Center

Collection Date/Time: 03/03/2020 13:10

Field ID: 20030454

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161983	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P380343	
		Sulfate	0.56		mg SO4/L	P380345	
	SM 2120 B-2011	Color (true)	440		PCU	P380132	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	76		mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.040	I	mg F/L	P380681	
2161985	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P380607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P380309	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P380170	
2161987	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P380063	

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: Goose Lake

Collection Date/Time: 03/03/2020 13:45

Field ID: 20030980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161984	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P380389	
		Sulfate	0.50		mg SO4/L	P380392	
	SM 2120 B-2011	Color (true)	430		PCU	P380132	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	64		mg/L	P380757	
	SM 2540 D-2011	TSS	2	U	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.040	I	mg F/L	P380681	
2161986	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P380607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P380309	
	SM 5310 B-2011	Organic Carbon	30		mg C/L	P380171	
2161988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P380063	

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: Lake Suggs CTR

Collection Date/Time: 03/03/2020 12:40

Field ID: 20030922

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161974	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	9.6		mg Cl/L	P380343	
		Sulfate	0.70		mg SO4/L	P380345	
		Color (true)	480		PCU	P380127	
	SM 2120 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	90		mg/L	P380757	
	SM 2540 D-2011	TSS	3	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.043	I	mg F/L	P380681	
2161977	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P380606	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P380182	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.080		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P380309	
	SM 5310 B-2011	Organic Carbon	38		mg C/L	P380170	
2161980	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P380063	
2161997	EPA 200.7 Rev. 4.4	Barium	12.9		ug/L	P380202	
		Calcium	2.40		mg/L	P380202	
		Iron	620		ug/L	P380202	
		Magnesium	1.80		mg/L	P380202	
		Potassium	1.9		mg/L	P380202	
		Sodium	5.2		mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	391		ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.88		ug/L	P380202	
		Boron**	20.1		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.59	I	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.59		ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	
		Hardness	13.4		mg/L	P380202	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/14/2020.

Sample Location: Lake Rowan CTR

Collection Date/Time: 03/03/2020 11:50

Field ID: 20030923

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161975	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P380343	
		Sulfate	0.98		mg SO4/L	P380345	
	SM 2120 B-2011	Color (true)	250		PCU	P380127	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	79		mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380681	
2161978	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P380607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.51		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P380309	
	SM 5310 B-2011	Organic Carbon	38		mg C/L	P380170	
2161981	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2161998	EPA 200.7 Rev. 4.4	Barium	14.6		ug/L	P380202	
		Calcium	2.35		mg/L	P380202	
		Iron	250		ug/L	P380202	
		Magnesium	1.44		mg/L	P380202	
		Potassium	0.79	I	mg/L	P380202	
		Sodium	3.9		mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	190		ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.61		ug/L	P380202	
		Boron**	19.3		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.71	I	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.51		ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	
		Hardness	11.8		mg/L	P380202	
	SM 2340B						

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/14/2020.

Sample Location: Lake Rowan CTR

Collection Date/Time: 03/03/2020 11:55

Field ID: 20030923_Dup

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161976	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P380343	
		Sulfate	0.98		mg SO4/L	P380345	
	SM 2120 B-2011	Color (true)	250		PCU	P380127	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	79		mg/L	P380757	
	SM 2540 D-2011	TSS	2	U	mg/L	P380547	
2161979	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380681	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P380607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.51		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P380309	
2161982	SM 5310 B-2011	Organic Carbon	38		mg C/L	P380170	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2161999	EPA 200.7 Rev. 4.4	Barium	14.5		ug/L	P380202	
		Calcium	2.37		mg/L	P380202	
		Iron	250		ug/L	P380202	
		Magnesium	1.45		mg/L	P380202	
		Potassium	0.79	I	mg/L	P380202	
		Sodium	3.8		mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	191		ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.63		ug/L	P380202	
		Boron**	21.3		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.40	U	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.51		ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	
		Hardness	11.9		mg/L	P380202	
	SM 2340B						

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/14/2020.

Sample Location: Lake Rowan CTR

Collection Date/Time: 03/03/2020 12:00

Field ID: FB 03022020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161989	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P380389	
		Sulfate	0.20	U	mg SO4/L	P380392	
		Color (true)	2.5	U	PCU	P380132	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380591	
	SM 2540 C-2011	TDS	15	U	mg/L	P380756	
	SM 2540 D-2011	TSS	2	U	mg/L	P380546	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380595	MS
2161990	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P380607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P380298	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P380309	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P380171	
2161991	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2162000	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P380202	
		Calcium	0.075	U	mg/L	P380202	
		Iron	30	U	ug/L	P380202	
		Magnesium	0.040	U	mg/L	P380202	
		Potassium	0.30	U	mg/L	P380202	
		Sodium	0.50	U	mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.050	U	ug/L	P380202	
		Boron**	2.0	U	ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.40	U	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.20	U	ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	

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: P380054

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

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
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: P380202

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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: P380343

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380298

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P380127

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P380132

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380590

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

Reference Method: SM 2320 B-2011
Batch ID: P380591

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

Reference Method: SM 2540 C-2011
Batch ID: P380756

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P380757

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380546

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380547

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380170

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

Reference Method: SM 5310 B-2011
Batch ID: P380171

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: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.2		P	85 - 115
Calcium	102		P	85 - 115
Iron	100		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	98.7		P	85 - 115
Sodium	99.6		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.4		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	98.6		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	98.1		P	85 - 115
Lead	95.8		P	85 - 115
Nickel	96.3		P	85 - 115
Selenium	94.0		P	85 - 115
Silver	94.1		P	85 - 115
Thallium	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

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: P380298

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

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: P380309

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P380127

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P380132

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

Reference Method: SM 2320 B-2011
Batch ID: P380590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 2320 B-2011
Batch ID: P380591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P380171

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Barium	103		P	80 - 120
2161902	Calcium	100		P	80 - 120
2161902	Iron	102		P	80 - 120
2161902	Magnesium	103		P	80 - 120
2161902	Potassium	105		P	80 - 120
2161902	Sodium	99.1		P	80 - 120
2161902	Zinc	104		P	80 - 120
2161957	Barium	102	102	P/P	80 - 120
2161957	Calcium	100	99.7	P/P	80 - 120
2161957	Iron	102	102	P/P	80 - 120
2161957	Magnesium	102	103	P/P	80 - 120
2161957	Potassium	101	101	P/P	80 - 120
2161957	Sodium	99.2	98.4	P/P	80 - 120
2161957	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Aluminum	95.0		P	80 - 120
2161902	Antimony	100		P	80 - 120
2161902	Arsenic	97.9		P	80 - 120
2161902	Boron	102		P	80 - 120
2161902	Cadmium	102		P	80 - 120
2161902	Chromium	97.9		P	80 - 120
2161902	Copper	93.0		P	80 - 120
2161902	Lead	96.3		P	80 - 120
2161902	Nickel	99.3		P	80 - 120
2161902	Selenium	86.9		P	80 - 120
2161902	Silver	92.2		P	80 - 120
2161902	Thallium	102		P	80 - 120
2161957	Aluminum	93.9	95.2	P/P	80 - 120
2161957	Antimony	103	103	P/P	80 - 120
2161957	Arsenic	96.6	96.3	P/P	80 - 120
2161957	Boron	102	101	P/P	80 - 120
2161957	Cadmium	103	101	P/P	80 - 120
2161957	Chromium	97.8	98.4	P/P	80 - 120
2161957	Copper	95.6	95.9	P/P	80 - 120
2161957	Lead	96.8	96.1	P/P	80 - 120
2161957	Nickel	96.2	95.1	P/P	80 - 120
2161957	Selenium	93.2	92.7	P/P	80 - 120
2161957	Silver	93.3	94.1	P/P	80 - 120
2161957	Thallium	101	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161843	Chloride	98.1		P	90 - 110
2161920	Chloride	97.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161843	Sulfate	99.6		P	90 - 110
2161920	Sulfate	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161984	Chloride	96.5		P	90 - 110
2162070	Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161984	Sulfate	98.6		P	90 - 110
2162070	Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161940	Ammonia-N	98.9	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162173	Ammonia-N	96.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161967	Kjeldahl Nitrogen	105	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162071	Kjeldahl Nitrogen	100	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162538	Kjeldahl Nitrogen	96.2	91.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161941	NO2NO3-N	96.4	96.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161936	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162017	O-Phosphate-P	99.2	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162608	Fluoride	110	110	F/F	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162166	Fluoride	97.5	98.6	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161936	Organic Carbon	99.3	103	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P380171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162014	Organic Carbon	97.8	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162011	Turbidity	7.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Barium	0.0477	Spike	P	0 - 20
2161957	Calcium	0.189	Spike	P	0 - 20
2161957	Iron	0.0367	Spike	P	0 - 20
2161957	Magnesium	0.464	Spike	P	0 - 20
2161957	Potassium	0.406	Spike	P	0 - 20
2161957	Sodium	0.618	Spike	P	0 - 20
2161957	Zinc	0.276	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Aluminum	1.12	Spike	P	0 - 20
2161957	Antimony	0.301	Spike	P	0 - 20
2161957	Arsenic	0.311	Spike	P	0 - 20
2161957	Boron	1.74	Spike	P	0 - 20
2161957	Cadmium	1.39	Spike	P	0 - 20
2161957	Chromium	0.663	Spike	P	0 - 20
2161957	Copper	0.357	Spike	P	0 - 20
2161957	Lead	0.709	Spike	P	0 - 20
2161957	Nickel	1.20	Spike	P	0 - 20
2161957	Selenium	0.531	Spike	P	0 - 20
2161957	Silver	0.904	Spike	P	0 - 20
2161957	Thallium	0.455	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161920	Chloride	0.575	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161920	Sulfate	0.615	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162070	Chloride	0.680	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162070	Sulfate	0.352	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161940	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162173	Ammonia-N	4.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161967	Kjeldahl Nitrogen	5.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162071	Kjeldahl Nitrogen	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162538	Kjeldahl Nitrogen	4.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161941	NO2NO3-N	0.425	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161936	Total-P	1.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162017	O-Phosphate-P	0.903	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	Color (true)	1.43	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162020	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162559	Total Alkalinity	0.0108	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
Batch ID: P380591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Total Alkalinity	0.283	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P380756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161910	TDS	1.79	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P380757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	TDS	0.722	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162166	Fluoride	0.963	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P380170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161936	Organic Carbon	2.81	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P380171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162014	Organic Carbon	0.312	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97995

Included Lab Sample IDs: 2161974, 2161975, 2161976, 2161983, 2161984, 2161989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97998

Included Lab Sample IDs: 2161980, 2161981, 2161982, 2161987, 2161988, 2161991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	96.1	P/P	90 - 110
O-Phosphate-P	97.5	96.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98019

Included Lab Sample IDs: 2161974, 2161975, 2161976, 2161983, 2161984, 2161989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	102	103	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: SM 5310 B-2011

Run ID: A98030

Included Lab Sample IDs: 2161977, 2161978, 2161979, 2161985, 2161986, 2161990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.5	P/P	90 - 110
Organic Carbon	98.5	99.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98048

Included Lab Sample IDs: 2161997, 2161998, 2161999, 2162000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	103	P/P	90 - 110
Barium	102	102	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Calcium	98.5	101	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Iron	99.5	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	99.0	101	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Potassium	99.0	101	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Sodium	104	104	P/P	90 - 110
Zinc	99.5	101	P/P	90 - 110
Zinc	99.8	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98061

Included Lab Sample IDs: 2161977, 2161978, 2161979, 2161985, 2161986, 2161990

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98065

Included Lab Sample IDs: 2161977, 2161978, 2161979, 2161985, 2161986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	105	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98081

Included Lab Sample IDs: 2161997, 2161998, 2161999, 2162000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.4	95.9	P/P	90 - 110
Aluminum	95.7	97.3	P/P	90 - 110
Arsenic	100	99.1	P/P	90 - 110
Arsenic	101	99.9	P/P	90 - 110
Boron	102	101	P/P	90 - 110
Boron	96.4	99.3	P/P	90 - 110
Chromium	97.9	97.2	P/P	90 - 110
Chromium	98.2	97.3	P/P	90 - 110
Copper	93.6	93.3	P/P	90 - 110
Copper	99.1	97.5	P/P	90 - 110
Lead	97.5	97.0	P/P	90 - 110
Lead	98.2	97.5	P/P	90 - 110
Nickel	100	98.3	P/P	90 - 110
Nickel	99.5	98.9	P/P	90 - 110
Selenium	96.8	96.4	P/P	90 - 110
Selenium	97.1	95.3	P/P	90 - 110
Silver	90.6	90.2	P/P	90 - 110
Silver	90.9	92.2	P/P	90 - 110
Thallium	94.1	94.7	P/P	90 - 110
Thallium	96.0	94.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2161974, 2161975, 2161976, 2161983, 2161984, 2161989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	97.8	98.8	P/P	90 - 110
Chloride	98.6	100	P/P	90 - 110
Chloride	99.0	98.6	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	97.9	98.8	P/P	90 - 110
Sulfate	98.8	100	P/P	90 - 110
Sulfate	99.1	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98132

Included Lab Sample IDs: 2161990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98139

Included Lab Sample IDs: 2161997, 2161998, 2161999, 2162000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	97.7	P/P	90 - 110
Antimony	98.8	97.7	P/P	90 - 110
Cadmium	98.0	97.4	P/P	90 - 110
Cadmium	99.6	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98155

Included Lab Sample IDs: 2161977, 2161985, 2161986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	99.4	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98174

Included Lab Sample IDs: 2161974, 2161975, 2161976, 2161983, 2161984, 2161989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.6	P/P	90 - 110
Total Alkalinity	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98174

Included Lab Sample IDs: 2161989

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98179

Included Lab Sample IDs: 2161977, 2161978, 2161979, 2161985, 2161986, 2161990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	101	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98185

Included Lab Sample IDs: 2161990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A98204

Included Lab Sample IDs: 2161974, 2161975, 2161976, 2161983, 2161984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.5	P/P	90 - 110
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98211

Included Lab Sample IDs: 2161978, 2161979

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						7.11	
EPA 200.7 Rev. 4.4	Barium	99.2	103	102	102			0.0477
	Calcium	102	100	100	99.7			0.189
	Iron	100	102	102	102			0.0367
	Magnesium	102	103	102	103			0.464
	Potassium	98.7	105	101	101			0.406
	Sodium	99.6	99.1	99.2	98.4			0.618
	Zinc	99.8	104	101	101			0.276
EPA 200.8 Rev. 5.4	Aluminum	94.4	93.9	95.2	95.0			1.12
	Antimony	103	103	103	100			0.301
	Arsenic	98.6	96.6	96.3	97.9			0.311
	Boron	99.4	102	101	102			1.74
	Cadmium	101	103	101	102			1.39
	Chromium	98.8	97.8	98.4	97.9			0.663
	Copper	98.1	95.6	95.9	93.0			0.357
	Lead	95.8	96.8	96.1	96.3			0.709
	Nickel	96.3	96.2	95.1	99.3			1.20
	Selenium	94.0	93.2	92.7	86.9			0.531
	Silver	94.1	93.3	94.1	92.2			0.904
	Thallium	99.1	101	100	102			0.455
EPA 300.0 Rev. 2.1	Chloride	99.5	97.4	98.1			0.575	
	Chloride	97.6	96.2	96.5			0.680	
	Sulfate	99.8	98.9	99.6			0.615	
	Sulfate	98.9	96.0	98.6			0.352	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.9	101				1.66
	Ammonia-N	102	96.4	101				4.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	105	97.5				5.24
	Kjeldahl Nitrogen	102	100	97.7				1.71
	Kjeldahl Nitrogen	97.3	96.2	91.0				4.26
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.4	96.8				0.425
EPA 365.1 Rev. 2.0	Total-P	106	106	105				1.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	99.2	100				0.903
SM 2120 B-2011	Color (true)	99.2					1.43	
	Color (true)	101					1.99	
SM 2320 B-2011	Total Alkalinity	102					0.0108	
	Total Alkalinity	102					0.283	
SM 2540 C-2011	TDS						1.79	
	TDS						0.722	
SM 4500 F-C-2011	Fluoride	101	110	110				0.0
	Fluoride	96.4	97.5	98.6				0.963
SM 5310 B-2011	Organic Carbon	99.8	99.3	103				2.81
	Organic Carbon	101	97.8	98.1				0.312

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2161997, 2161998, 2161999, 2162000
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2161997, 2161998, 2161999, 2162000
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2161974, 2161975, 2161976, 2161983, 2161984, 2161989

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2161977, 2161978, 2161979, 2161985, 2161986, 2161990
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2161977, 2161978, 2161979, 2161985, 2161986, 2161990
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2161977, 2161978, 2161979, 2161985, 2161986, 2161990
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2161977, 2161978, 2161979, 2161985, 2161986, 2161990
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2161980, 2161981, 2161982, 2161987, 2161988, 2161991
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2161997, 2161998, 2161999
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2161977, 2161978, 2161979, 2161985, 2161986, 2161990

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	03/04/2020			03/04/2020 16:33	Yen Ta	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
EPA 200.7 Rev. 4.4	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 15:38	Betina Topolski	2162000
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 20:08	Betina Topolski	2161997
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 20:16	Betina Topolski	2161998
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 20:22	Betina Topolski	2161999
EPA 200.8 Rev. 5.4	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 15:47	Alexander Thompson	2162000
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 20:08	Alexander Thompson	2161997
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 20:17	Alexander Thompson	2161998
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 20:27	Alexander Thompson	2161999
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 14:54	Justin Cutchin	2162000
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 16:15	Justin Cutchin	2161997
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 16:18	Justin Cutchin	2161998
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 16:22	Justin Cutchin	2161999
EPA 300.0 Rev. 2.1	03/04/2020			03/10/2020 04:44	Lipi Saha	2161974
	03/04/2020			03/10/2020 05:20	Lipi Saha	2161975
	03/04/2020			03/10/2020 05:32	Lipi Saha	2161976
	03/04/2020			03/10/2020 05:44	Lipi Saha	2161983
	03/04/2020			03/10/2020 15:25	Lipi Saha	2161984
	03/04/2020			03/10/2020 19:51	Lipi Saha	2161989
EPA 350.1 Rev. 2.0	03/04/2020			03/10/2020 12:29	Ping Hua	2161977
	03/04/2020			03/10/2020 12:50	Ping Hua	2161986
	03/04/2020			03/10/2020 12:56	Ping Hua	2161990
	03/04/2020			03/10/2020 15:13	Ping Hua	2161978
	03/04/2020			03/10/2020 15:14	Ping Hua	2161979
	03/04/2020			03/10/2020 15:22	Ping Hua	2161985
EPA 351.2 Rev. 2.0	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 12:52	Jhamieka S. Greenwood	2161977
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:06	Jhamieka S. Greenwood	2161978
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:07	Jhamieka S. Greenwood	2161979
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:09	Jhamieka S. Greenwood	2161985
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:10	Jhamieka S. Greenwood	2161986
	03/04/2020	03/09/2020 14:25	Sima Feizi	03/11/2020 11:52	Jhamieka S. Greenwood	2161990
EPA 353.2 Rev. 2.0	03/04/2020			03/09/2020 10:33	Beverly Y. Sanders	2161977
	03/04/2020			03/09/2020 10:34	Beverly Y. Sanders	2161978
	03/04/2020			03/09/2020 10:36	Beverly Y. Sanders	2161979
	03/04/2020			03/09/2020 10:37	Beverly Y. Sanders	2161985
	03/04/2020			03/09/2020 10:38	Beverly Y. Sanders	2161986
	03/04/2020			03/09/2020 10:39	Beverly Y. Sanders	2161990
EPA 365.1 Rev. 2.0	03/04/2020	03/09/2020 14:56	Yen Ta	03/11/2020 19:27	Benjamin T. Nordmann	2161977
	03/04/2020	03/09/2020 14:56	Yen Ta	03/11/2020 19:31	Benjamin T. Nordmann	2161985

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	03/04/2020	03/09/2020 14:56	Yen Ta	03/11/2020 19:32	Benjamin T. Nordmann	2161986
	03/04/2020	03/09/2020 14:56	Yen Ta	03/12/2020 14:10	Benjamin T. Nordmann	2161990
	03/04/2020	03/09/2020 14:56	Yen Ta	03/13/2020 13:46	Benjamin T. Nordmann	2161978
	03/04/2020	03/09/2020 14:56	Yen Ta	03/13/2020 13:47	Benjamin T. Nordmann	2161979
EPA 365.1 Rev. 2.0 dissolved	03/04/2020			03/04/2020 16:07	Carlos Miranda	2161980
	03/04/2020			03/04/2020 16:12	Carlos Miranda	2161981
	03/04/2020			03/04/2020 16:13	Carlos Miranda	2161982
	03/04/2020			03/04/2020 16:14	Carlos Miranda	2161987
	03/04/2020			03/04/2020 16:15	Carlos Miranda	2161988
	03/04/2020			03/04/2020 16:16	Carlos Miranda	2161991
SM 2120 B-2011	03/04/2020			03/04/2020 19:02		2161974
	03/04/2020			03/04/2020 19:03		2161975
	03/04/2020			03/04/2020 19:04		2161976
	03/04/2020			03/04/2020 19:12		2161989
	03/04/2020			03/04/2020 19:20		2161983
	03/04/2020			03/04/2020 19:21		2161984
SM 2320 B-2011	03/04/2020			03/12/2020 07:02	Dale L. Simmons	2161974
	03/04/2020			03/12/2020 07:10	Dale L. Simmons	2161975
	03/04/2020			03/12/2020 07:18	Dale L. Simmons	2161976
	03/04/2020			03/12/2020 07:27	Dale L. Simmons	2161983
	03/04/2020			03/12/2020 07:36	Dale L. Simmons	2161984
	03/04/2020			03/12/2020 09:33	Dale L. Simmons	2161989
SM 2340B	03/04/2020			03/06/2020 20:08	Betina Topolski	2161997
	03/04/2020			03/06/2020 20:16	Betina Topolski	2161998
	03/04/2020			03/06/2020 20:22	Betina Topolski	2161999
SM 2540 C-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 2540 D-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2161974, 2161975, 2161976, 2161983, 2161984, 2161989
SM 4500 F-C-2011	03/04/2020			03/12/2020 09:33	Dale L. Simmons	2161989
	03/04/2020			03/14/2020 03:06	Dale L. Simmons	2161974
	03/04/2020			03/14/2020 03:11	Dale L. Simmons	2161975
	03/04/2020			03/14/2020 03:31	Dale L. Simmons	2161976
	03/04/2020			03/14/2020 03:36	Dale L. Simmons	2161983
	03/04/2020			03/14/2020 03:41	Dale L. Simmons	2161984
SM 5310 B-2011	03/04/2020			03/05/2020 20:22	Lauren Lees	2161977
	03/04/2020			03/05/2020 20:35	Lauren Lees	2161978
	03/04/2020			03/05/2020 20:48	Lauren Lees	2161979
	03/04/2020			03/05/2020 21:01	Lauren Lees	2161985
	03/04/2020			03/05/2020 23:01	Lauren Lees	2161986

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/04/2020			03/05/2020 23:14	Lauren Lees	2161990