

Chemical Analysis Report

NW-DIST-2016-03-24-02

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

Event Description: **WBID 135 36 7 118 71 111**

Request ID: **RQ-2016-03-21-31**

Customer: **NW-DIST**

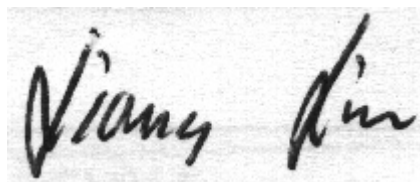
Project ID: **SMP**

Send Reports to:
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160 W Government St
Suite 208A
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-APR-2016 17:36

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: MITCHELL CREEK @ CAMP RD.

Collection Date/Time: 03/23/2016 11:40

Field ID: G4NW0114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783139	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P301105	
		Sulfate	1.5		mg SO4/L	P301107	
	SM 2120 B	Color (true)	38		PCU	P300996	
	SM 2320 B-97	Total Alkalinity	1.7	I	mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	19	I	mg/L	P301562	
	SM 2540 D-97	TSS	2	U	mg/L	P301507	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783144	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P301515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P301393	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P301376	
1783149	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300989	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MCCOSTILL MILL CR BELOW EBENEZER CHURCH RD.

Collection Date/Time: 03/23/2016 14:05

Field ID: G4NW0320

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783140	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P301105	
		Sulfate	1.0		mg SO4/L	P301107	
	SM 2120 B	Color (true)	12		PCU	P300996	
	SM 2320 B-97	Total Alkalinity	0.66	I	mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	28		mg/L	P301562	
	SM 2540 D-97	TSS	3	I	mg/L	P301507	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783145	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	UJ	mg N/L	P301583	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.6		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P301393	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P301376	
1783150	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300990	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: BRAY MILL CREEK NORTH OF OIL PLANT ROAD

Collection Date/Time: 03/23/2016 14:40

Field ID: G4NW0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783141	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P301013	

Field ID: G4NW0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783141	EPA 300.0 Rev. 2.1	Chloride	8.9	A	mg Cl/L	P301316	
		Sulfate	4.4	A	mg SO4/L	P301317	
	SM 2120 B	Color (true)	9.9		PCU	P300996	
	SM 2320 B-97	Total Alkalinity	2.5	I	mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	64		mg/L	P301563	
	SM 2540 D-97	TSS	14		mg/L	P301508	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783146	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P301583	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	4.0		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P301393	
	SM 5310 B-00	Organic Carbon	0.86	I	mg C/L	P301376	
1783151	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300990	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MOORE CREEK SR 197

Collection Date/Time: 03/23/2016 15:05

Field ID: G4NW0318

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783142	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P301316	
		Sulfate	0.42	I	mg SO4/L	P301317	
	SM 2120 B	Color (true)	13		PCU	P300996	
	SM 2320 B-97	Total Alkalinity	4.3		mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	55		mg/L	P301563	
	SM 2540 D-97	TSS	3	I	mg/L	P301508	
1783147	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P301368	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P301583	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P301393	
1783152	SM 5310 B-00	Organic Carbon	1.3		mg C/L	P301376	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300990	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: MOORE CREEK ABOVE MINERAL SPRINGS RD.

Collection Date/Time: 03/23/2016 15:30

Field ID: G4NW0355

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783143	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P301316	
		Sulfate	0.80		mg SO4/L	P301317	
	SM 2120 B	Color (true)	20		PCU	P300996	

Field ID: G4NW0355

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783143	SM 2320 B-97	Total Alkalinity	2.3	I	mg CaCO3/L	P301476	
	SM 2540 C-97	TDS	46		mg/L	P301563	
	SM 2540 D-97	TSS	6	I	mg/L	P301508	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301481	
1783148	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P301368	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P301583	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P301393	
	SM 5310 B-00	Organic Carbon	1.5		mg C/L	P301376	
1783153	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300990	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: CANOE CR CR-4

Collection Date/Time: 03/23/2016 12:00

Field ID: G4NW0280

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783127	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P301012	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P301105	
		Sulfate	0.82		mg SO4/L	P301107	
		SM 2120 B	Color (true)	26		PCU	P300995
	SM 2320 B-97	Total Alkalinity	3.0		mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	30		mg/L	P301562	
	SM 2540 D-97	TSS	2	I	mg/L	P301507	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783131	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P301515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.95		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P301392	
	SM 5310 B-00	Organic Carbon	2.0		mg C/L	P301376	
1783135	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300989	
1783239	EPA 200.7 Rev. 4.4	Calcium	1.64		mg/L	P301305	
		Iron	570		ug/L	P301305	
		Magnesium	1.41		mg/L	P301305	
		Potassium	0.70	I	mg/L	P301305	
		Sodium	2.2		mg/L	P301305	
		Zinc	5.0	U	ug/L	P301305	
	EPA 200.8 Rev. 5.4	Arsenic	0.29		ug/L	P301305	
		Cadmium	0.020	U	ug/L	P301305	
		Chromium	0.28		ug/L	P301305	
		Copper	0.15	I	ug/L	P301305	
		Lead	0.16	I	ug/L	P301305	
		Nickel	0.41		ug/L	P301305	
		Silver	0.0050	U	ug/L	P301305	

Field ID: G4NW0280

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The calcium matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

Sample Location: CANOE CR ABOVE BRATT RD.

Collection Date/Time: 03/23/2016 12:25

Field ID: G4NW0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1783128	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P301105	
		Sulfate	0.86		mg SO4/L	P301107	
	SM 2120 B	Color (true)	29		PCU	P300995	
	SM 2320 B-97	Total Alkalinity	2.6		mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	26		mg/L	P301562	
	SM 2540 D-97	TSS	4	I	mg/L	P301507	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783132	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P301515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.78		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P301392	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P301376	
1783136	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300989	
1783240	EPA 200.7 Rev. 4.4	Calcium	1.48		mg/L	P301305	
		Iron	550		ug/L	P301305	
		Magnesium	1.29		mg/L	P301305	
		Potassium	0.62	I	mg/L	P301305	
		Sodium	2.1		mg/L	P301305	
		Zinc	5.0	U	ug/L	P301305	
	EPA 200.8 Rev. 5.4	Arsenic	0.26		ug/L	P301305	
		Cadmium	0.020	U	ug/L	P301305	
		Chromium	0.19	I	ug/L	P301305	
		Copper	0.15	I	ug/L	P301305	
		Lead	0.16	I	ug/L	P301305	
		Nickel	0.42		ug/L	P301305	
		Silver	0.0050	U	ug/L	P301305	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The calcium matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

Sample Location: CANOE CREEK ABOVE HWY 29

Collection Date/Time: 03/23/2016 13:00

Field ID: G4NW0201

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1783129	EPA 180.1 Rev. 2.0	Turbidity	4.1	A	NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P301105	
		Sulfate	0.89		mg SO4/L	P301107	

Field ID: G4NW0201

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783129	SM 2120 B	Color (true)	32	A	PCU	P300995	
	SM 2320 B-97	Total Alkalinity	2.5	I	mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	21	I	mg/L	P301562	
	SM 2540 D-97	TSS	4	I	mg/L	P301507	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
1783133	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P301515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.78		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P301392	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P301376	
1783137	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300989	
1783241	EPA 200.7 Rev. 4.4	Calcium	1.41		mg/L	P301305	
		Iron	690		ug/L	P301305	
		Magnesium	1.26		mg/L	P301305	
		Potassium	0.62	I	mg/L	P301305	
		Sodium	2.1		mg/L	P301305	
		Zinc	5.0	U	ug/L	P301305	
	EPA 200.8 Rev. 5.4	Arsenic	0.28		ug/L	P301305	
		Cadmium	0.020	U	ug/L	P301305	
		Chromium	0.30		ug/L	P301305	
		Copper	0.14	I	ug/L	P301305	
		Lead	0.18	I	ug/L	P301305	
		Nickel	0.41		ug/L	P301305	
		Silver	0.0050	U	ug/L	P301305	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The calcium matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

Sample Location: CANOE CR CR-168

Collection Date/Time: 03/23/2016 13:30

Field ID: G4NW0282

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783130	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P301013	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P301105	
		Sulfate	0.92		mg SO4/L	P301107	
		Color (true)	20		PCU	P300995	
	SM 2320 B-97	Total Alkalinity	4.5		mg CaCO3/L	P301443	
	SM 2540 C-97	TDS	37		mg/L	P301562	
	SM 2540 D-97	TSS	2	U	mg/L	P301507	
1783134	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301446	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P301367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P301515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.8		mg N/L	P301491	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P301393	
	SM 5310 B-00	Organic Carbon	1.5		mg C/L	P301376	

Field ID: G4NW0282

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1783138	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P300989	
1783242	EPA 200.7 Rev. 4.4	Calcium	2.70		mg/L	P301305	
		Iron	560		ug/L	P301305	
		Magnesium	2.37		mg/L	P301305	
		Potassium	1.1	I	mg/L	P301305	
		Sodium	2.4		mg/L	P301305	
		Zinc	5.0	U	ug/L	P301305	
	EPA 200.8 Rev. 5.4	Arsenic	0.31		ug/L	P301305	
		Cadmium	0.020	U	ug/L	P301305	
		Chromium	0.14	I	ug/L	P301305	
		Copper	0.18	I	ug/L	P301305	
		Lead	0.16	I	ug/L	P301305	
		Nickel	0.54		ug/L	P301305	
		Silver	0.0050	U	ug/L	P301305	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The calcium matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P301012

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P301013

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P301305

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P301305

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301305

Component	Result	Code	Units
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301105

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301107

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301316

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301317

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301368

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301515

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301583

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301491

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301392

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301393

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300989

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300990

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

Reference Method: SM 2120 B
Batch ID: P300995

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P300996

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301443

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

Reference Method: SM 2320 B-97
Batch ID: P301476

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P301562

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P301563

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P301507

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P301508

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P301446

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P301481

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P301376

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: P301305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.4		P	85 - 115
Sodium	102		P	85 - 115
Zinc	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.2		P	85 - 115
Cadmium	93.1		P	85 - 115
Chromium	97.6		P	85 - 115
Copper	89.8		P	85 - 115
Lead	89.6		P	85 - 115
Nickel	92.5		P	85 - 115
Silver	93.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301105

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301107

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: P301316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301317

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301368

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301515

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301583

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301392

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301393

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300989

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300990

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

Reference Method: SM 2320 B-97
Batch ID: P301443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P301476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P301446

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	94 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P301481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P301376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P301305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783060	Calcium	101		P	80 - 120
1783060	Iron	100		P	80 - 120
1783060	Magnesium	102		P	80 - 120
1783060	Potassium	98.1		P	80 - 120
1783060	Sodium	99.5		P	80 - 120
1783060	Zinc	98.4		P	80 - 120
1783784	Iron	103	101	P/P	80 - 120
1783784	Magnesium	101		P	80 - 120
1783784	Potassium	99.3	96.3	P/P	80 - 120
1783784	Sodium	99.9		P	80 - 120
1783784	Zinc	99.4	99.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783060	Arsenic	95.6		P	80 - 120
1783060	Cadmium	96.2		P	80 - 120
1783060	Chromium	98.9		P	80 - 120
1783060	Copper	89.4		P	80 - 120
1783060	Lead	90.0		P	80 - 120
1783060	Nickel	91.6		P	80 - 120
1783060	Silver	94.1		P	80 - 120
1783784	Arsenic	95.0	96.8	P/P	80 - 120
1783784	Cadmium	94.4	95.6	P/P	80 - 120
1783784	Chromium	95.1	95.9	P/P	80 - 120
1783784	Copper	88.8	88.5	P/P	80 - 120
1783784	Lead	89.9	90.9	P/P	80 - 120
1783784	Nickel	89.7	90.6	P/P	80 - 120
1783784	Silver	92.0	92.8	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783102	Chloride	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783108	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783102	Sulfate	97.4	97.6	P/P	90 - 110
1783108	Sulfate	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783141	Chloride	99.4		P	90 - 110
1783252	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783141	Sulfate	96.8		P	90 - 110
1783252	Sulfate	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783131	Ammonia-N	95.4	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783167	Ammonia-N	99.9	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783114	Kjeldahl Nitrogen	91.6	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783145	Kjeldahl Nitrogen	105	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783144	NO2NO3-N	101	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783111	Total-P	101	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783134	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783123	O-Phosphate-P	98.2	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783151	O-Phosphate-P	102		P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783051	Fluoride	96.7	97.8	P/P	94 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P301481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783590	Fluoride	98.8	101	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P301376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1783111	Organic Carbon	91.9	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783100	Turbidity	6.90	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783129	Turbidity	2.69	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P301305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783784	Calcium	0.713	Spike	P	0 - 20
1783784	Iron	1.57	Spike	P	0 - 20
1783784	Magnesium	1.60	Spike	P	0 - 20
1783784	Potassium	2.21	Spike	P	0 - 20
1783784	Sodium	2.02	Spike	P	0 - 20
1783784	Zinc	0.287	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P301305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783784	Arsenic	1.83	Spike	P	0 - 20
1783784	Cadmium	1.26	Spike	P	0 - 20
1783784	Chromium	0.790	Spike	P	0 - 20
1783784	Copper	0.369	Spike	P	0 - 20
1783784	Lead	1.10	Spike	P	0 - 20
1783784	Nickel	0.948	Spike	P	0 - 20
1783784	Silver	0.878	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783102	Chloride	0.147	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783102	Sulfate	0.211	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783141	Chloride	0.00676	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783141	Sulfate	2.86	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783131	Ammonia-N	2.59	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P301368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783167	Ammonia-N	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783114	Kjeldahl Nitrogen	2.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P301583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783145	Kjeldahl Nitrogen	5.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783144	NO2NO3-N	0.351	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783111	Total-P	1.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P301393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783134	Total-P	1.24	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783123	O-Phosphate-P	2.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783151	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P300995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783129	Color (true)	1.15	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P300996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783165	Color (true)	0.956	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783051	Total Alkalinity	0.519	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P301476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783590	Total Alkalinity	0.297	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P301562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783105	TDS	1.08	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P301563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783165	TDS	0.905	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P301446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783051	Fluoride	1.05	Spike	P	0 - 3.7

Reference Method: SM 4500 F-C-97
Batch ID: P301481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783590	Fluoride	1.46	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P301376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1783111	Organic Carbon	0.470	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A68401
Included Lab Sample IDs: 1783127, 1783128, 1783129, 1783130, 1783139, 1783140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.3	99.3	P/P	90 - 110
Sulfate	95.7	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68425
Included Lab Sample IDs: 1783135, 1783136, 1783137, 1783138, 1783149, 1783150, 1783151, 1783152, 1783153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	97.9	P/P	90 - 110
O-Phosphate-P	97.4	97.6	P/P	90 - 110
O-Phosphate-P	97.7	97.4	P/P	90 - 110
O-Phosphate-P	98.6	96.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A68426
Included Lab Sample IDs: 1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.9	98.0	P/P	90 - 115
Color (true)	98.0	98.0	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68427

Included Lab Sample IDs: 1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68546

Included Lab Sample IDs: 1783141, 1783142, 1783143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	99.8	99.9	P/P	90 - 110
Sulfate	99.9	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68562

Included Lab Sample IDs: 1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	100	99.9	P/P	90 - 110
Ammonia-N	99.9	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A68565

Included Lab Sample IDs: 1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.4	93.2	P/P	90 - 110
Organic Carbon	92.5	92.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A68578

Included Lab Sample IDs: 1783239, 1783240, 1783241, 1783242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.1	96.6	P/P	90 - 110
Arsenic	98.0	97.1	P/P	90 - 110
Cadmium	96.3	96.9	P/P	90 - 110
Cadmium	96.9	94.6	P/P	90 - 110
Chromium	100	99.7	P/P	90 - 110
Chromium	99.7	97.5	P/P	90 - 110
Copper	94.3	94.6	P/P	90 - 110
Copper	94.9	94.3	P/P	90 - 110
Lead	93.0	92.8	P/P	90 - 110
Lead	93.7	93.0	P/P	90 - 110
Nickel	95.0	94.7	P/P	90 - 110
Nickel	96.1	95.0	P/P	90 - 110
Silver	93.7	92.5	P/P	90 - 110
Silver	93.8	93.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A68600

Included Lab Sample IDs: 1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142

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

Reference Method: SM 4500 F-C-97

Run ID: A68600

Included Lab Sample IDs: 1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A68601

Included Lab Sample IDs: 1783239, 1783240, 1783241, 1783242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.8	P/P	90 - 110
Iron	100	100	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Potassium	97.8	97.1	P/P	90 - 110
Sodium	99.2	96.4	P/P	90 - 110
Zinc	101	99.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68607

Included Lab Sample IDs: 1783143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68607

Included Lab Sample IDs: 1783143

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68614

Included Lab Sample IDs: 1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68665

Included Lab Sample IDs: 1783145, 1783146, 1783147, 1783148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	102	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68686

Included Lab Sample IDs: 1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.0	P/P	90 - 110
Total-P	99.0	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68715

Included Lab Sample IDs: 1783131, 1783132, 1783133, 1783134, 1783144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	99.1	P/P	90 - 110
Kjeldahl Nitrogen	97.0	96.6	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						6.90	
	Turbidity						2.69	
EPA 200.7 Rev. 4.4	Calcium	104	101					0.713
	Iron	103	100	103	101			1.57
	Magnesium	103	102	101				1.60
	Potassium	99.4	98.1	99.3	96.3			2.21
	Sodium	102	99.5	99.9				2.02
	Zinc	101	98.4	99.4	99.2			0.287
EPA 200.8 Rev. 5.4	Arsenic	95.2	95.6	95.0	96.8			1.83
	Cadmium	93.1	96.2	94.4	95.6			1.26
	Chromium	97.6	98.9	95.1	95.9			0.790
	Copper	89.8	89.4	88.8	88.5			0.369
	Lead	89.6	90.0	89.9	90.9			1.10
	Nickel	92.5	91.6	89.7	90.6			0.948
	Silver	93.4	94.1	92.0	92.8			0.878
EPA 300.0 Rev. 2.1	Chloride	103	102	102	102			0.147
	Chloride	99.6	99.4	96.9			0.0067	
	Sulfate	99.8	97.4	97.6	99.6			0.211
	Sulfate	97.6	96.8	94.3			2.86	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	95.4	98.3				2.59
	Ammonia-N	98.0	99.9	103				1.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	91.6	93.8				2.01
	Kjeldahl Nitrogen	103	105	111				5.56
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	102				0.351
EPA 365.1 Rev. 2.0	Total-P	98.3	101	99.6				1.57
	Total-P	103	103	105				1.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.2	102				2.48
	O-Phosphate-P	101	102					0.0
SM 2120 B	Color (true)						1.15	
	Color (true)						0.956	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2320 B-97	Total Alkalinity	103			0.519	
	Total Alkalinity	103			0.297	
SM 2540 C-97	TDS				1.08	
	TDS				0.905	
SM 4500 F-C-97	Fluoride	97.8	96.7	97.8		1.05
	Fluoride	96.6	98.8	101		1.46
SM 5310 B-00	Organic Carbon	94.4	91.9	92.4		0.470

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1783239, 1783240, 1783241, 1783242
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1783239, 1783240, 1783241, 1783242
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1783135, 1783136, 1783137, 1783138, 1783149, 1783150, 1783151, 1783152, 1783153
SM 2120 B / E31780	True Color measured at 450 nm	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148

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	03/24/2016			03/24/2016 13:23	Sima Feizi	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
EPA 200.7 Rev. 4.4	03/24/2016	03/30/2016	Elliott D. Healy	04/01/2016	Joshua Ayres	1783239, 1783240, 1783241, 1783242
EPA 200.8 Rev. 5.4	03/24/2016	03/30/2016	Elliott D. Healy	04/01/2016	Charles J. Peterson	1783239, 1783240, 1783241, 1783242
EPA 300.0 Rev. 2.1	03/24/2016			03/26/2016	Julia Storbeck	1783127, 1783128, 1783129, 1783130, 1783139, 1783140
	03/24/2016			03/30/2016	Ping Hua	1783141, 1783142, 1783143
EPA 350.1 Rev. 2.0	03/24/2016			03/31/2016	Diana M. Turner	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 351.2 Rev. 2.0	03/24/2016	04/04/2016	Sofia Elnemr	04/06/2016	Christopher Armour	1783131, 1783132, 1783133, 1783134, 1783144
	03/24/2016	04/05/2016	Sofia Elnemr	04/05/2016	Virginia P. Brown	1783145, 1783146, 1783147, 1783148
EPA 353.2 Rev. 2.0	03/24/2016			04/01/2016	Diana M. Turner	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 365.1 Rev. 2.0	03/24/2016	04/01/2016	Christopher Armour	04/06/2016	Rochelle Y Jackson	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148
EPA 365.1 Rev. 2.0 dissolved	03/24/2016			03/24/2016 11:17	Ping Hua	1783151
	03/24/2016			03/24/2016 11:39	Ping Hua	1783135, 1783136
	03/24/2016			03/24/2016 11:40	Ping Hua	1783137
	03/24/2016			03/24/2016 11:41	Ping Hua	1783138
	03/24/2016			03/24/2016 11:50	Ping Hua	1783150
	03/24/2016			03/24/2016 11:51	Ping Hua	1783152, 1783153
	03/24/2016			03/24/2016 12:17	Ping Hua	1783149
SM 2120 B	03/24/2016			03/24/2016 12:42	Rochelle Y Jackson	1783127, 1783128
	03/24/2016			03/24/2016 12:44	Rochelle Y Jackson	1783129
	03/24/2016			03/24/2016 12:45	Rochelle Y Jackson	1783130
	03/24/2016			03/24/2016 12:48	Rochelle Y Jackson	1783139
	03/24/2016			03/24/2016 12:49	Rochelle Y Jackson	1783140, 1783141
	03/24/2016			03/24/2016 12:50	Rochelle Y Jackson	1783142
	03/24/2016			03/24/2016 12:51	Rochelle Y Jackson	1783143
SM 2320 B-97	03/24/2016			03/30/2016	Dale L. Simmons	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 2540 C-97	03/24/2016			03/28/2016	Sima Feizi	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 2540 D-97	03/24/2016			03/28/2016	Sima Feizi	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	03/24/2016			03/30/2016	Dale L. Simmons	1783127, 1783128, 1783129, 1783130, 1783139, 1783140, 1783141, 1783142, 1783143
SM 5310 B-00	03/24/2016			03/31/2016	Sofia Elnemr	1783131, 1783132, 1783133, 1783134, 1783144, 1783145, 1783146, 1783147, 1783148