

Chemical Analysis Report

WQAP-2016-05-05-01

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

Event Description: **Alligator Creek and Quincy Creek**
Request ID: **RQ-2016-05-02-40**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Katrina Sanders

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 02-JUN-2016 09:30

A handwritten signature in black ink, appearing to read "Timothy Fitzpatrick", with a stylized flourish at the end.

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: Pine Barn creek at Woodrest Rd

Collection Date/Time: 05/04/2016 10:00

Field ID: G3WA0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796209	EPA 180.1 Rev. 2.0	Turbidity	20		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	4.4		mg Cl/L	P304289	
	SM 2120 B	Color (true)	85	Q	PCU	P303675	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	43		mg/L	P304456	
	SM 2540 D-97	TSS	15		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P304333	
1796217	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P304218	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P304296	
1796225	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P303645	

Ref. Method and Comment:

SM 2120 B: Sample reanalyzed out of holding time due to analytical difficulties.

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

Sample Location: Alligator Creek upstream of SR 273

Collection Date/Time: 05/04/2016 10:25

Field ID: G3WA0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796210	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	5.3		mg Cl/L	P304289	
	SM 2120 B	Color (true)	95		PCU	P303675	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	50		mg/L	P304456	
	SM 2540 D-97	TSS	20		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P304333	
1796218	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P304218	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P304296	
1796226	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P303645	

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: Alligator Creek upstream of Penny Rd

Collection Date/Time: 05/04/2016 11:25

Field ID: G3WA0003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796211	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	7.6		mg Cl/L	P304289	
	SM 2120 B	Color (true)	100		PCU	P303619	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P304328	

Field ID: G3WA0003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796211	SM 2540 C-97	TDS	59		mg/L	P304456	
	SM 2540 D-97	TSS	4	I	mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P304333	
1796219	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P304218	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P304296	
1796227	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P303645	

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: Scurlook Creek at Pilgrim Rd

Collection Date/Time: 05/04/2016 12:00

Field ID: G3WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796212	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P304289	
	SM 2120 B	Color (true)	130		PCU	P303675	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	57		mg/L	P304456	
	SM 2540 D-97	TSS	22		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P304333	
1796220	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P304942	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P304296	
1796228	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P303645	

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: Alligator Creek upstream of Bently Rd

Collection Date/Time: 05/04/2016 12:30

Field ID: G3WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796213	EPA 180.1 Rev. 2.0	Turbidity	15	A	NTU	P303668	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P304289	
	SM 2120 B	Color (true)	58	A	PCU	P303675	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	66		mg/L	P304456	
	SM 2540 D-97	TSS	6	I	mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P304333	
1796221	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P304942	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P304265	

Field ID: G3WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796221	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	7.1		mg C/L	P304296	
1796229	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P303645	

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: Little Alligator Creek at SR 273

Collection Date/Time: 05/04/2016 13:05

Field ID: G3WA0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796214	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P303668	
	EPA 300.0 Rev. 2.1	Chloride	8.2	A	mg Cl/L	P304289	
	SM 2120 B	Color (true)	71		PCU	P303675	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	69		mg/L	P304456	
	SM 2540 D-97	TSS	14		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P304333	
1796222	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P304942	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P304616	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P304296	
1796230	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P303645	

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: Unnamed Creek at Wood rest Rd

Collection Date/Time: 05/04/2016 13:40

Field ID: G3WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796215	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P303668	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P304289	
	SM 2120 B	Color (true)	180		PCU	P303675	
	SM 2320 B-97	Total Alkalinity	3.7		mg CaCO3/L	P304330	
	SM 2540 C-97	TDS	50		mg/L	P304457	
	SM 2540 D-97	TSS	20		mg/L	P304389	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P304334	
1796223	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P304942	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P304621	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P304681	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P304296	
1796231	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P303645	

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: Gilberts Mill Creek at Aycok Rd

Collection Date/Time: 05/04/2016 14:15

Field ID: G3WA0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796216	EPA 180.1 Rev. 2.0	Turbidity	9.8		NTU	P303668	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P304289	
	SM 2120 B	Color (true)	230		PCU	P303620	
	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P304330	
	SM 2540 C-97	TDS	45		mg/L	P304457	
	SM 2540 D-97	TSS	8	I	mg/L	P304389	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P304334	
1796224	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P305199	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P304621	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P304265	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P304681	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P304296	
1796232	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P303645	

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: Quincy Creek Upstream of SR 12

Collection Date/Time: 05/04/2016 16:00

Field ID: G1WA0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796203	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P304289	
	SM 2120 B	Color (true)	94		PCU	P303619	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P304481	
	SM 2540 C-97	TDS	48		mg/L	P304456	
	SM 2540 D-97	TSS	16		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P304483	
1796205	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P304218	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P304264	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P304296	
1796207	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P303644	
1796257	EPA 200.7 Rev. 4.4	Calcium	7.07		mg/L	P303829	
		Iron	2.45E+03		ug/L	P303829	
		Magnesium	2.27		mg/L	P303829	
		Potassium	0.30	U	mg/L	P303829	
		Sodium	3.1		mg/L	P303829	
		Zinc	5.0	U	ug/L	P303829	
	EPA 200.8 Rev. 5.4	Arsenic	1.10		ug/L	P303829	
		Cadmium	0.020	U	ug/L	P303829	
		Chromium	1.06		ug/L	P303829	
		Copper	0.41		ug/L	P303829	
		Lead	0.59	I	ug/L	P303829	
		Nickel	0.31		ug/L	P303829	

Field ID: G1WA0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796257	EPA 200.8 Rev. 5.4	Silver	0.0050	U	ug/L	P303829	

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: Quincy Creek Upstream of Ralph Strong Rd Collection Date/Time: 05/04/2016 16:30

Field ID: G1WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1796204	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P303667	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P304289	
	SM 2120 B	Color (true)	56		PCU	P303675	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P304328	
	SM 2540 C-97	TDS	48		mg/L	P304456	
	SM 2540 D-97	TSS	19		mg/L	P304388	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P304333	
1796206	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P304218	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P304620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P304264	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P304615	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P304296	
1796208	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P303644	
1796258	EPA 200.7 Rev. 4.4	Calcium	7.06		mg/L	P303829	
		Iron	2.76E+03		ug/L	P303829	
		Magnesium	2.33		mg/L	P303829	
		Potassium	0.30	U	mg/L	P303829	
		Sodium	3.1		mg/L	P303829	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P303829	
		Arsenic	1.16		ug/L	P303829	
		Cadmium	0.020	U	ug/L	P303829	
		Chromium	1.38		ug/L	P303829	
		Copper	0.41		ug/L	P303829	
		Lead	0.83		ug/L	P303829	
		Nickel	0.49		ug/L	P303829	
		Silver	0.0050	U	ug/L	P303829	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed on 05/27/2016.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P303667

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303668

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303829

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: P303829

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.20	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: P304289

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304218

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304942

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305199

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304620

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304621

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304265

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304615

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304616

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304681

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303644

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303645

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P303619

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P303620

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P303675

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P304328

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

Reference Method: SM 2320 B-97
Batch ID: P304330

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

Reference Method: SM 2320 B-97
Batch ID: P304481

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

Reference Method: SM 2540 C-97
Batch ID: P304456

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P304457

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P304388

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P304389

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P304333

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P304334

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P304483

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304296

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: P303829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	108		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.1		P	85 - 115
Cadmium	98.1		P	85 - 115
Chromium	96.4		P	85 - 115
Copper	93.6		P	85 - 115
Lead	101		P	85 - 115
Nickel	96.1		P	85 - 115
Silver	93.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304218

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: P304942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305199

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304620

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304621

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304265

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304615

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304616

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304681

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: P303644

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: P303645

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

Reference Method: SM 2320 B-97
Batch ID: P304328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P304330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P304481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P304333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P304334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P304483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P304296

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794523	Calcium	102		P	80 - 120
1794523	Iron	107	109	P/P	80 - 120
1794523	Magnesium	105		P	80 - 120
1794523	Potassium	102	103	P/P	80 - 120
1794523	Sodium	103		P	80 - 120
1794523	Zinc	97.0	95.9	P/P	80 - 120
1796611	Calcium	106		P	80 - 120
1796611	Iron	107		P	80 - 120
1796611	Magnesium	109		P	80 - 120
1796611	Potassium	99.2		P	80 - 120
1796611	Sodium	101		P	80 - 120
1796611	Zinc	99.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1794523	Arsenic	96.4	96.7	P/P	80 - 120
1794523	Cadmium	98.2	98.6	P/P	80 - 120
1794523	Chromium	96.2	94.2	P/P	80 - 120
1794523	Copper	91.2	91.9	P/P	80 - 120
1794523	Lead	101	102	P/P	80 - 120
1794523	Nickel	91.6	93.2	P/P	80 - 120
1794523	Silver	93.5	92.9	P/P	80 - 120
1796611	Arsenic	94.6		P	80 - 120
1796611	Cadmium	97.3		P	80 - 120
1796611	Chromium	96.2		P	80 - 120
1796611	Copper	93.1		P	80 - 120
1796611	Lead	101		P	80 - 120
1796611	Nickel	94.8		P	80 - 120
1796611	Silver	91.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304289

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796172	Chloride	97.5		P	90 - 110
1796214	Chloride	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796138	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797582	Ammonia-N	98.1	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799500	Ammonia-N	98.3	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796173	Kjeldahl Nitrogen	99.2	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796305	Kjeldahl Nitrogen	111	93.2	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796126	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796217	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796173	Total-P	107	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796222	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1795990	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796134	O-Phosphate-P	98.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796228	O-Phosphate-P	98.4	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P304333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796388	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P304334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796490	Fluoride	98.5	98.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P304483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797005	Fluoride	96.4	96.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1796127	Organic Carbon	97.6	97.7	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796136	Turbidity	2.16	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796213	Turbidity	2.02	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P303829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794523	Calcium	2.23	Spike	P	0 - 20
1794523	Iron	1.80	Spike	P	0 - 20
1794523	Magnesium	2.52	Spike	P	0 - 20
1794523	Potassium	0.837	Spike	P	0 - 20
1794523	Sodium	1.73	Spike	P	0 - 20
1794523	Zinc	1.12	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P303829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1794523	Arsenic	0.253	Spike	P	0 - 20
1794523	Cadmium	0.397	Spike	P	0 - 20
1794523	Chromium	2.06	Spike	P	0 - 20
1794523	Copper	0.821	Spike	P	0 - 20
1794523	Lead	1.41	Spike	P	0 - 20
1794523	Nickel	1.69	Spike	P	0 - 20
1794523	Silver	0.656	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796214	Chloride	0.607	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796138	Ammonia-N	2.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797582	Ammonia-N	0.915	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799500	Ammonia-N	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796173	Kjeldahl Nitrogen	2.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796305	Kjeldahl Nitrogen	10.9	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796126	NO2NO3-N	1.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796217	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796173	Total-P	4.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796222	Total-P	1.27	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1795990	Total-P	0.812	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796134	O-Phosphate-P	2.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P303645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796228	O-Phosphate-P	0.450	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796136	Color (true)	3.18	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796213	Color (true)	2.98	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796213	Color (true)	7.57	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P304328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796388	Total Alkalinity	0.213	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P304330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796490	Total Alkalinity	0.279	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P304481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797005	Total Alkalinity	0.293	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P304456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796172	TDS	0.995	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P304457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796354	TDS	3.12	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P304333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796388	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P304334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796490	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P304483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797005	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P304296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1796127	Organic Carbon	0.0439	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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69297

Included Lab Sample IDs: 1796203, 1796211, 1796216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	101	P/P	90 - 115
Color (true)	99.2	100	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69300

Included Lab Sample IDs: 1796207, 1796208, 1796225, 1796226, 1796227, 1796228, 1796229, 1796230, 1796231, 1796232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	99.8	P/P	90 - 110
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69305

Included Lab Sample IDs: 1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A69307

Included Lab Sample IDs: 1796204, 1796209, 1796210, 1796212, 1796213, 1796214, 1796215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.6	P/P	90 - 115
Color (true)	101	99.1	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69423

Included Lab Sample IDs: 1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Chloride	99.6	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69435

Included Lab Sample IDs: 1796257, 1796258

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.6	98.3	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	98.8	97.8	P/P	90 - 110
Sodium	99.8	99.0	P/P	90 - 110
Zinc	99.9	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69447

Included Lab Sample IDs: 1796205, 1796206, 1796217, 1796218, 1796219

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	99.7	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69460

Included Lab Sample IDs: 1796257, 1796258

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.1	97.7	P/P	90 - 110
Cadmium	97.9	97.5	P/P	90 - 110
Chromium	97.2	97.3	P/P	90 - 110
Copper	95.6	97.3	P/P	90 - 110
Nickel	96.0	98.5	P/P	90 - 110
Silver	95.1	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69466

Included Lab Sample IDs: 1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224

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

Reference Method: SM 5310 B-00

Run ID: A69473

Included Lab Sample IDs: 1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.9	P/P	90 - 110
Organic Carbon	97.3	97.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69481

Included Lab Sample IDs: 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	101	P/P	90 - 110
Total Alkalinity	99.4	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69481

Included Lab Sample IDs: 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69500

Included Lab Sample IDs: 1796257, 1796258

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

Reference Method: SM 2320 B-97

Run ID: A69535

Included Lab Sample IDs: 1796203

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

Reference Method: SM 4500 F-C-97

Run ID: A69535

Included Lab Sample IDs: 1796203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69598

Included Lab Sample IDs: 1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69607

Included Lab Sample IDs: 1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.7	94.6	P/P	90 - 110
Kjeldahl Nitrogen	95.9	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69617

Included Lab Sample IDs: 1796223, 1796224

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69674

Included Lab Sample IDs: 1796220, 1796221, 1796222, 1796223

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.3	P/P	90 - 110
Ammonia-N	99.3	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69737

Included Lab Sample IDs: 1796224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.7	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					2.16	
	Turbidity					2.02	
EPA 200.7 Rev. 4.4	Calcium	104	102	106			2.23
	Iron	108	107	109	107		1.80
	Magnesium	105	105	109			2.52
	Potassium	101	102	103	99.2		0.837
	Sodium	101	103	101			1.73
	Zinc	99.8	97.0	95.9	99.0		1.12
EPA 200.8 Rev. 5.4	Arsenic	95.1	96.4	96.7	94.6		0.253
	Cadmium	98.1	98.2	98.6	97.3		0.397
	Chromium	96.4	96.2	94.2	96.2		2.06
	Copper	93.6	91.2	91.9	93.1		0.821
	Lead	101	101	102	101		1.41
	Nickel	96.1	91.6	93.2	94.8		1.69
	Silver	93.2	93.5	92.9	91.7		0.656
EPA 300.0 Rev. 2.1	Chloride	97.5	98.9	97.5		0.607	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	103			2.32
	Ammonia-N	99.0	98.1	99.1			0.915
	Ammonia-N	99.5	98.3	96.6			1.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3	99.2	103			2.74
	Kjeldahl Nitrogen	104	111	93.2			10.9
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102				1.70
	NO2NO3-N	104	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	103	107	102			4.76
	Total-P	98.9	106	107			1.27
	Total-P	103	103	104			0.812
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.6	101			2.38
	O-Phosphate-P	104	98.4	98.9			0.450
SM 2120 B	Color (true)					3.18	
	Color (true)					2.98	
	Color (true)					7.57	
SM 2320 B-97	Total Alkalinity	101				0.213	
	Total Alkalinity	101				0.279	
	Total Alkalinity	102				0.293	
SM 2540 C-97	TDS					0.995	
	TDS					3.12	
SM 4500 F-C-97	Fluoride	96.7	98.0	98.0			0.0
	Fluoride	98.7	98.5	98.5			0.0
	Fluoride	97.3	96.4	96.4			0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision
				LCS SMP MS
SM 5310 B-00	Organic Carbon	97.6	97.6 97.7	0.0439

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1796257, 1796258
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1796257, 1796258
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1796207, 1796208, 1796225, 1796226, 1796227, 1796228, 1796229, 1796230, 1796231, 1796232
SM 2120 B / E31780	True Color measured at 450 nm	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224

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	05/05/2016			05/05/2016 16:25	Blanca Fach	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
EPA 200.7 Rev. 4.4	05/05/2016	05/09/2016	Elliott D. Healy	05/11/2016	Joshua Ayres	1796257, 1796258
EPA 200.8 Rev. 5.4	05/05/2016	05/09/2016	Elliott D. Healy	05/12/2016	Charles J. Peterson	1796257, 1796258
	05/05/2016	05/09/2016	Elliott D. Healy	05/16/2016	Robert K Palmer	1796257, 1796258
EPA 300.0 Rev. 2.1	05/05/2016			05/13/2016	Elisa J Lutz	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
EPA 350.1 Rev. 2.0	05/05/2016			05/12/2016	Diana M. Turner	1796205, 1796206, 1796217, 1796218, 1796219
	05/05/2016			05/24/2016	Diana M. Turner	1796220, 1796221, 1796222, 1796223
	05/05/2016			05/26/2016	Diana M. Turner	1796224
EPA 351.2 Rev. 2.0	05/05/2016	05/19/2016	Sofia Elnemr	05/20/2016	Christopher Armour	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 353.2 Rev. 2.0	05/05/2016			05/13/2016	Peter D. Kaus	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224
EPA 365.1 Rev. 2.0	05/05/2016	05/19/2016	Vijayalakshmi Reddy	05/20/2016	Lipi Saha	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222
	05/05/2016	05/20/2016	Lipi Saha	05/20/2016	Lipi Saha	1796223, 1796224
EPA 365.1 Rev. 2.0 dissolved	05/05/2016			05/05/2016 15:43	Julia Storbeck	1796228
	05/05/2016			05/05/2016 16:20	Julia Storbeck	1796207
	05/05/2016			05/05/2016 16:21	Julia Storbeck	1796208
	05/05/2016			05/05/2016 16:22	Julia Storbeck	1796225, 1796226
	05/05/2016			05/05/2016 16:23	Julia Storbeck	1796227
	05/05/2016			05/05/2016 16:28	Julia Storbeck	1796229
	05/05/2016			05/05/2016 16:29	Julia Storbeck	1796230
	05/05/2016			05/05/2016 16:30	Julia Storbeck	1796231
	05/05/2016			05/05/2016 16:31	Julia Storbeck	1796232
SM 2120 B	05/05/2016			05/05/2016 13:31	Rochelle Y Jackson	1796203
	05/05/2016			05/05/2016 13:34	Rochelle Y Jackson	1796211
	05/05/2016			05/05/2016 13:51	Rochelle Y Jackson	1796216
	05/05/2016			05/06/2016 10:08	Rochelle Y Jackson	1796204, 1796209
	05/05/2016			05/06/2016 10:09	Rochelle Y Jackson	1796210
	05/05/2016			05/06/2016 10:10	Rochelle Y Jackson	1796212
	05/05/2016			05/06/2016 10:11	Rochelle Y Jackson	1796213
	05/05/2016			05/06/2016 10:12	Rochelle Y Jackson	1796214
	05/05/2016			05/06/2016 10:29	Rochelle Y Jackson	1796215
SM 2320 B-97	05/05/2016			05/13/2016	Dale L. Simmons	1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	05/05/2016			05/14/2016	Dale L. Simmons	1796215, 1796216
	05/05/2016			05/17/2016	Dale L. Simmons	1796203
SM 2540 C-97	05/05/2016			05/09/2016	Sima Feizi	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 2540 D-97	05/05/2016			05/09/2016	Sima Feizi	1796203, 1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214, 1796215, 1796216
SM 4500 F-C-97	05/05/2016			05/13/2016	Dale L. Simmons	1796204, 1796209, 1796210, 1796211, 1796212, 1796213, 1796214
	05/05/2016			05/14/2016	Dale L. Simmons	1796215, 1796216
	05/05/2016			05/17/2016	Dale L. Simmons	1796203
SM 5310 B-00	05/05/2016			05/13/2016	Diana M. Turner	1796205, 1796206, 1796217, 1796218, 1796219, 1796220, 1796221, 1796222, 1796223, 1796224