

Chemical Analysis Report

SE-DIST-2016-01-28-01

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

Event Description: **SMP_3293, 3287, 3286B, 3283, 3277C, 3276**

Request ID: **RQ-2016-01-25-54**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

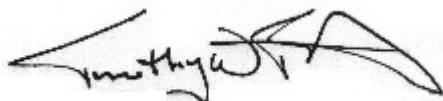
FL Dept. of Environmental Protection
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Attn: Olga Sanchez

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 17-FEB-2016 09:45



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: C-2 Canal Vicinity of Red Rd, South Miami 3293 Collection Date/Time: 01/27/2016 11:10

Field ID: 28040399_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766260	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P297715	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P298130	
		Sulfate	3.8		mg SO4/L	P298127	
		Color (true)	40		PCU	P297756	
	SM 2320 B-97	Total Alkalinity	210		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	311		mg/L	P298333	
	SM 2540 D-97	TSS	2	I	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P297857	
1766267	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P298031	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P297926	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P297907	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P297982	
1766274	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766295	EPA 200.7 Rev. 4.4	Calcium	80.3		mg/L	P298002	
		Iron	400		ug/L	P298002	
		Magnesium	7.41		mg/L	P298002	
		Potassium	2.4		mg/L	P298002	
		Sodium	31.7		mg/L	P298002	
		Zinc	5.0	U	ug/L	P298002	
	EPA 200.8 Rev. 5.4	Arsenic	1.27		ug/L	P298002	
		Cadmium	0.050	U	ug/L	P298002	
		Chromium	0.30	U	ug/L	P298002	
		Copper	0.50	U	ug/L	P298002	
		Lead	0.20	U	ug/L	P298002	
		Nickel	0.26	I	ug/L	P298002	
		Silver	0.025	U	ug/L	P298002	

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: C-102 @ SW 248th St 3300

Collection Date/Time: 01/27/2016 12:05

Field ID: G4SE0064_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766261	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P297715	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P298130	
		Sulfate	35		mg SO4/L	P298127	
		Color (true)	5.4	I	PCU	P297756	
	SM 2320 B-97	Total Alkalinity	227		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	354	A	mg/L	P298333	
	SM 2540 D-97	TSS	2	U	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P297857	
1766268	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P298031	

Field ID: G4SE0064_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766268	EPA 353.2 Rev. 2.0	NO2NO3-N	3.7		mg N/L	P297926	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P297982	
1766275	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766296	EPA 200.7 Rev. 4.4	Calcium	103		mg/L	P298002	
		Iron	30	U	ug/L	P298002	
		Magnesium	6.45		mg/L	P298002	
		Potassium	11.4		mg/L	P298002	
		Sodium	22.9		mg/L	P298002	
		Zinc	5.0	U	ug/L	P298002	
	EPA 200.8 Rev. 5.4	Arsenic	0.52	I	ug/L	P298002	
		Cadmium	0.050	U	ug/L	P298002	
		Chromium	0.30	U	ug/L	P298002	
		Copper	1.16		ug/L	P298002	
		Lead	0.20	U	ug/L	P298002	
		Nickel	1.63		ug/L	P298002	
		Silver	0.025	U	ug/L	P298002	

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: TamiamiCan@KromrAv 3268B

Collection Date/Time: 01/27/2016 13:10

Field ID: 42009019_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766262	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P297715	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P298130	
		Sulfate	0.45	I	mg SO4/L	P298127	
		Color (true)	43	A	PCU	P297757	
	SM 2320 B-97	Total Alkalinity	186		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	281		mg/L	P298333	
	SM 2540 D-97	TSS	3	I	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P297857	
1766269	EPA 350.1 Rev. 2.0	Ammonia-N	0.39		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P298031	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P297926	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P297982	
1766276	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766297	EPA 200.7 Rev. 4.4	Calcium	63.7		mg/L	P298002	
		Iron	240		ug/L	P298002	
		Magnesium	8.72		mg/L	P298002	
		Potassium	2.5		mg/L	P298002	
		Sodium	30.9		mg/L	P298002	
		Zinc	5.0	U	ug/L	P298002	
	EPA 200.8 Rev. 5.4	Arsenic	0.61	I	ug/L	P298002	

Field ID: 42009019_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766297	EPA 200.8 Rev. 5.4	Cadmium	0.050	U	ug/L	P298002	
		Chromium	0.30	U	ug/L	P298002	
		Copper	0.50	U	ug/L	P298002	
		Lead	0.20	U	ug/L	P298002	
		Nickel	0.25	U	ug/L	P298002	
		Silver	0.025	U	ug/L	P298002	

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: LR-10 3287

Collection Date/Time: 01/27/2016 13:55

Field ID: G4SELR10_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766263	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P297715	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P298130	
		Sulfate	2.7		mg SO4/L	P298127	
	SM 2120 B	Color (true)	38		PCU	P297757	
	SM 2320 B-97	Total Alkalinity	218		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	301		mg/L	P298333	
	SM 2540 D-97	TSS	2	U	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P297857	
1766270	EPA 350.1 Rev. 2.0	Ammonia-N	3.2		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.9		mg N/L	P298031	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P297926	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P297982	
1766277	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766298	EPA 200.7 Rev. 4.4	Calcium	65.4		mg/L	P298017	
		Iron	58	I	ug/L	P298017	
		Magnesium	8.23		mg/L	P298017	
		Potassium	4.9		mg/L	P298017	
		Sodium	38.1		mg/L	P298017	
		Zinc	5.0	U	ug/L	P298017	
	EPA 200.8 Rev. 5.4	Arsenic	0.59	I	ug/L	P298017	
		Cadmium	0.050	U	ug/L	P298017	
		Chromium	0.30	U	ug/L	P298017	
		Copper	0.50	U	ug/L	P298017	
		Lead	0.20	U	ug/L	P298017	
		Nickel	0.41	I	ug/L	P298017	
		Silver	0.025	U	ug/L	P298017	

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: C-9 @ NW 57th Ave 3283

Collection Date/Time: 01/27/2016 14:40

Field ID: G4SE0075_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766264	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P297715	
	EPA 300.0 Rev. 2.1	Chloride	67		mg Cl/L	P298130	
		Sulfate	3.7		mg SO4/L	P298127	
		Color (true)	46		PCU	P297757	
	SM 2320 B-97	Total Alkalinity	224		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	347		mg/L	P298333	
	SM 2540 D-97	TSS	2	U	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P297857	
1766271	EPA 350.1 Rev. 2.0	Ammonia-N	0.61		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P298031	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.079		mg N/L	P297926	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P297982	
1766278	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766299	EPA 200.7 Rev. 4.4	Calcium	78.6		mg/L	P298017	
		Iron	320		ug/L	P298017	
		Magnesium	11.1		mg/L	P298017	
		Potassium	3.0		mg/L	P298017	
		Sodium	41.9		mg/L	P298017	
		Zinc	5.0	U	ug/L	P298017	
	EPA 200.8 Rev. 5.4	Arsenic	1.16		ug/L	P298017	
		Cadmium	0.050	U	ug/L	P298017	
		Chromium	0.39	I	ug/L	P298017	
		Copper	0.50	U	ug/L	P298017	
		Lead	0.20	U	ug/L	P298017	
		Nickel	0.29	I	ug/L	P298017	
		Silver	0.025	U	ug/L	P298017	

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: NNR-3 SF Canal Study/122 Broward 3277C

Collection Date/Time: 01/27/2016 15:10

Field ID: G4SENNR3_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766265	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P297716	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P298130	
		Sulfate	6.6		mg SO4/L	P298127	
		Color (true)	45		PCU	P297757	
	SM 2320 B-97	Total Alkalinity	215		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	351		mg/L	P298333	
	SM 2540 D-97	TSS	8	I	mg/L	P298274	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P297857	
1766272	EPA 350.1 Rev. 2.0	Ammonia-N	0.45		mg N/L	P298068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P298031	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P297927	

Field ID: G4SENNR3_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766272	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P297982	
1766279	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766300	EPA 200.7 Rev. 4.4	Calcium	77.1		mg/L	P298017	
		Iron	220		ug/L	P298017	
		Magnesium	10.5		mg/L	P298017	
		Potassium	3.3		mg/L	P298017	
		Sodium	41.6		mg/L	P298017	
		Zinc	5.0	U	ug/L	P298017	
	EPA 200.8 Rev. 5.4	Arsenic	0.80	I	ug/L	P298017	
		Cadmium	0.050	U	ug/L	P298017	
		Chromium	0.34	I	ug/L	P298017	
		Copper	0.84	I	ug/L	P298017	
		Lead	0.29	I	ug/L	P298017	
		Nickel	0.29	I	ug/L	P298017	
		Silver	0.025	U	ug/L	P298017	

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: N Fork New River @ 441 3276

Collection Date/Time: 01/27/2016 15:38

Field ID: 42009012_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766266	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P297716	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P298130	
		Sulfate	7.6		mg SO4/L	P298127	
		Color (true)	24		PCU	P297757	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P298140	
	SM 2540 C-97	TDS	189	A	mg/L	P298334	
	SM 2540 D-97	TSS	2	U	mg/L	P298275	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P297857	
1766273	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P298069	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P298032	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P297927	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P297908	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P297982	
1766280	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297711	
1766301	EPA 200.7 Rev. 4.4	Calcium	58.1		mg/L	P298017	
		Iron	40	I	ug/L	P298017	
		Magnesium	2.38		mg/L	P298017	
		Potassium	1.0	I	mg/L	P298017	
		Sodium	15.5		mg/L	P298017	
		Zinc	5.6	I	ug/L	P298017	
	EPA 200.8 Rev. 5.4	Arsenic	1.28		ug/L	P298017	
		Cadmium	0.050	U	ug/L	P298017	

Field ID: 42009012_01272016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1766301	EPA 200.8 Rev. 5.4	Chromium	0.30	U	ug/L	P298017	
		Copper	1.74		ug/L	P298017	
		Lead	0.20	U	ug/L	P298017	
		Nickel	0.43	I	ug/L	P298017	
		Silver	0.025	U	ug/L	P298017	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P297715

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P297716

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P298002

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 200.7 Rev. 4.4
 Batch ID: P298017

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: P298002

Component	Result	Code	Units
Arsenic	0.25	U	ug/L
Cadmium	0.050	U	ug/L
Chromium	0.30	U	ug/L
Copper	0.50	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.25	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298002

Component	Result	Code	Units
Silver	0.025	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298017

Component	Result	Code	Units
Arsenic	0.25	U	ug/L
Cadmium	0.050	U	ug/L
Chromium	0.30	U	ug/L
Copper	0.50	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.25	U	ug/L
Silver	0.025	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298127

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298130

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298068

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298031

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298032

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: P297926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297927

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297907

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297908

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297711

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

Reference Method: SM 2120 B
Batch ID: P297756

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P297757

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P298140

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

Reference Method: SM 2540 C-97
Batch ID: P298333

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P298334

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P298274

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P298275

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P297857

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P297982

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: P298002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Iron	105		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	98.9		P	85 - 115
Sodium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P298017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	108		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	102		P	85 - 115
Sodium	101		P	85 - 115
Zinc	104		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	100		P	85 - 115
Cadmium	96.5		P	85 - 115
Chromium	98.2		P	85 - 115
Copper	96.0		P	85 - 115
Lead	97.2		P	85 - 115
Nickel	99.5		P	85 - 115
Silver	94.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.7		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	98.5		P	85 - 115
Copper	95.2		P	85 - 115
Lead	96.8		P	85 - 115
Nickel	97.7		P	85 - 115
Silver	95.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298127

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298130

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298068

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298031

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297927

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297907

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297908

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297711

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

Reference Method: SM 2320 B-97
Batch ID: P298140

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

Reference Method: SM 4500 F-C-97
Batch ID: P297857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P297982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P298002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1765553	Calcium	106		P	80 - 120
1765553	Iron	105		P	80 - 120
1765553	Magnesium	104		P	80 - 120
1765553	Potassium	107		P	80 - 120
1765553	Sodium	102		P	80 - 120
1765553	Zinc	101		P	80 - 120
1766257	Calcium	108		P	80 - 120
1766257	Iron	106	108	P/P	80 - 120
1766257	Magnesium	105		P	80 - 120
1766257	Potassium	101	102	P/P	80 - 120
1766257	Sodium	100	101	P/P	80 - 120
1766257	Zinc	102	103	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P298017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766298	Calcium	107		P	80 - 120
1766298	Iron	105	105	P/P	80 - 120
1766298	Magnesium	105		P	80 - 120
1766298	Potassium	103		P	80 - 120
1766298	Sodium	103		P	80 - 120
1766298	Zinc	104	104	P/P	80 - 120
1766862	Calcium	109		P	80 - 120
1766862	Iron	108		P	80 - 120
1766862	Magnesium	107		P	80 - 120
1766862	Potassium	103		P	80 - 120
1766862	Sodium	102		P	80 - 120
1766862	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1765553	Arsenic	98.9		P	80 - 120
1765553	Cadmium	94.9		P	80 - 120
1765553	Chromium	96.3		P	80 - 120
1765553	Copper	96.2		P	80 - 120
1765553	Lead	96.9		P	80 - 120
1765553	Nickel	96.2		P	80 - 120
1765553	Silver	96.3		P	80 - 120
1766257	Arsenic	97.3	96.8	P/P	80 - 120
1766257	Cadmium	99.1	98.8	P/P	80 - 120
1766257	Chromium	95.1	95.3	P/P	80 - 120
1766257	Copper	90.7	91.2	P/P	80 - 120
1766257	Lead	95.1	94.9	P/P	80 - 120
1766257	Nickel	93.9	94.8	P/P	80 - 120
1766257	Silver	94.3	93.4	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766298	Arsenic	99.6	100	P/P	80 - 120
1766298	Cadmium	99.0	98.4	P/P	80 - 120
1766298	Chromium	101	102	P/P	80 - 120
1766298	Copper	98.2	95.7	P/P	80 - 120
1766298	Lead	99.7	99.3	P/P	80 - 120
1766298	Nickel	102	98.9	P/P	80 - 120
1766298	Silver	94.9	95.6	P/P	80 - 120
1766862	Arsenic	98.3		P	80 - 120
1766862	Cadmium	97.6		P	80 - 120
1766862	Chromium	96.8		P	80 - 120
1766862	Copper	94.8		P	80 - 120
1766862	Lead	96.2		P	80 - 120
1766862	Nickel	98.7		P	80 - 120
1766862	Silver	97.4		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766216	Sulfate	101		P	90 - 110
1766217	Sulfate	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766216	Chloride	104		P	90 - 110
1766217	Chloride	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766238	Ammonia-N	95.3	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766273	Ammonia-N	94.5	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766237	Kjeldahl Nitrogen	99.0	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766273	Kjeldahl Nitrogen	93.6	93.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P297926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766271	NO2NO3-N	99.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P297927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766272	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P297907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766218	Total-P	100	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P297908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766268	Total-P	99.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P297711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766276	O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P297857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766217	Fluoride	102	102	P/P	94 - 107

Reference Method: SM 5310 B-00
 Batch ID: P297982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1766139	Organic Carbon	96.6	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P297715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766216	Turbidity	8.04	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P297716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766265	Turbidity	2.94	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P298002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766257	Calcium	0.791	Spike	P	0 - 20
1766257	Iron	1.20	Spike	P	0 - 20
1766257	Magnesium	0.106	Spike	P	0 - 20
1766257	Potassium	1.01	Spike	P	0 - 20
1766257	Sodium	0.163	Spike	P	0 - 20
1766257	Zinc	1.19	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P298017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766298	Calcium	0.0506	Spike	P	0 - 20
1766298	Iron	0.217	Spike	P	0 - 20
1766298	Magnesium	0.462	Spike	P	0 - 20
1766298	Potassium	0.764	Spike	P	0 - 20
1766298	Sodium	0.0327	Spike	P	0 - 20
1766298	Zinc	0.274	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766257	Arsenic	0.454	Spike	P	0 - 20
1766257	Cadmium	0.277	Spike	P	0 - 20
1766257	Chromium	0.240	Spike	P	0 - 20
1766257	Copper	0.431	Spike	P	0 - 20
1766257	Lead	0.248	Spike	P	0 - 20
1766257	Nickel	0.963	Spike	P	0 - 20
1766257	Silver	0.976	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P298017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766298	Arsenic	0.698	Spike	P	0 - 20
1766298	Cadmium	0.587	Spike	P	0 - 20
1766298	Chromium	0.884	Spike	P	0 - 20
1766298	Copper	2.59	Spike	P	0 - 20
1766298	Lead	0.410	Spike	P	0 - 20
1766298	Nickel	2.70	Spike	P	0 - 20
1766298	Silver	0.664	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766216	Sulfate	0.610	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766216	Chloride	0.411	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766238	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766273	Ammonia-N	2.43	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766237	Kjeldahl Nitrogen	7.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766273	Kjeldahl Nitrogen	0.154	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766271	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766272	NO2NO3-N	0.320	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766218	Total-P	3.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766268	Total-P	3.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766276	O-Phosphate-P	0.700	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P297756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766216	Color (true)	0.680	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P297757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766262	Color (true)	0.874	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766855	Total Alkalinity	0.342	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P298333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766261	TDS	0.846	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P298334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766266	TDS	4.23	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P297857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766217	Fluoride	0.0	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P297982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1766139	Organic Carbon	1.96	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 365.1 Rev. 2.0 dissolved
Run ID: A67321
Included Lab Sample IDs: 1766274, 1766275, 1766276, 1766277, 1766278, 1766279, 1766280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.1	P/P	90 - 110
O-Phosphate-P	99.1	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A67327
Included Lab Sample IDs: 1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	99.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A67341
Included Lab Sample IDs: 1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	106	104	P/P	85 - 115
Color (true)	106	106	P/P	85 - 115

Reference Method: SM 4500 F-C-97
Run ID: A67375
Included Lab Sample IDs: 1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67405

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67418

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67451

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.2	P/P	90 - 110
Total-P	98.2	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67453

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.0	P/P	90 - 110
Ammonia-N	98.8	99.1	P/P	90 - 110
Ammonia-N	99.1	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67468

Included Lab Sample IDs: 1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Chloride	103	105	P/P	90 - 110
Sulfate	101	97.8	P/P	90 - 110
Sulfate	96.9	101	P/P	90 - 110
Sulfate	99.2	96.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A67470

Included Lab Sample IDs: 1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67479

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67479

Included Lab Sample IDs: 1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A67497

Included Lab Sample IDs: 1766295, 1766296, 1766297, 1766298, 1766299, 1766300, 1766301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	104	P/P	90 - 110
Calcium	106	104	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Iron	104	104	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	100	99.4	P/P	90 - 110
Potassium	99.1	99.9	P/P	90 - 110
Sodium	98.6	98.8	P/P	90 - 110
Sodium	98.7	98.5	P/P	90 - 110
Zinc	102	103	P/P	90 - 110
Zinc	104	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A67521

Included Lab Sample IDs: 1766295, 1766296, 1766297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	105	P/P	90 - 110
Cadmium	103	106	P/P	90 - 110
Chromium	102	104	P/P	90 - 110
Copper	101	103	P/P	90 - 110
Lead	103	105	P/P	90 - 110
Nickel	101	104	P/P	90 - 110
Silver	98.7	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A67545

Included Lab Sample IDs: 1766298, 1766299, 1766300, 1766301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	98.5	P/P	90 - 110
Cadmium	100	97.3	P/P	90 - 110
Chromium	101	98.9	P/P	90 - 110
Copper	101	98.8	P/P	90 - 110
Lead	101	98.8	P/P	90 - 110
Nickel	102	99.9	P/P	90 - 110
Silver	97.1	94.5	P/P	90 - 110

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

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					8.04	
	Turbidity					2.94	
EPA 200.7 Rev. 4.4	Calcium	108	106	108			0.791
	Calcium	107	107	109			0.0506
	Iron	105	105	106	108		1.20
	Iron	108	105	105	108		0.217
	Magnesium	106	104	105			0.106
	Magnesium	105	105	107			0.462
	Potassium	98.9	107	101	102		1.01
	Potassium	102	103	103			0.764
	Sodium	103	102	100	101		0.163
	Sodium	101	103	102			0.0327
	Zinc	103	101	102	103		1.19
	Zinc	104	104	104	105		0.274
EPA 200.8 Rev. 5.4	Arsenic	100	98.9	97.3	96.8		0.454
	Arsenic	97.7	99.6	100	98.3		0.698
	Cadmium	96.5	94.9	99.1	98.8		0.277
	Cadmium	103	99.0	98.4	97.6		0.587
	Chromium	98.2	96.3	95.1	95.3		0.240
	Chromium	98.5	101	102	96.8		0.884
	Copper	96.0	96.2	90.7	91.2		0.431
	Copper	95.2	98.2	95.7	94.8		2.59
	Lead	97.2	96.9	95.1	94.9		0.248
	Lead	96.8	99.7	99.3	96.2		0.410
	Nickel	99.5	96.2	93.9	94.8		0.963
	Nickel	97.7	102	98.9	98.7		2.70
	Silver	94.6	96.3	94.3	93.4		0.976
	Silver	95.0	94.9	95.6	97.4		0.664
EPA 300.0 Rev. 2.1	Chloride	106	104	104		0.411	
	Sulfate	101	101	99.4		0.610	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	95.3	96.7			1.36
	Ammonia-N	95.9	94.5	97.6			2.43
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.2	99.0	107			7.06
	Kjeldahl Nitrogen	97.0	93.6	93.3			0.154
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.6	102			1.43
	NO2NO3-N	102	101	102			0.320
EPA 365.1 Rev. 2.0	Total-P	103	100	104			3.28
	Total-P	98.4	99.4	102			3.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	99.7	100			0.700
SM 2120 B	Color (true)					0.680	
	Color (true)					0.874	
SM 2320 B-97	Total Alkalinity	101				0.342	
SM 2540 C-97	TDS					0.846	
	TDS					4.23	
SM 4500 F-C-97	Fluoride	95.4	102	102			0.0
SM 5310 B-00	Organic Carbon	107	96.6	98.6			1.96

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1766295, 1766296, 1766297, 1766298, 1766299, 1766300, 1766301
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1766295, 1766296, 1766297, 1766298, 1766299, 1766300, 1766301
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1766274, 1766275, 1766276, 1766277, 1766278, 1766279, 1766280
SM 2120 B / E31780	True Color measured at 450 nm	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/28/2016			01/28/2016 13:46	Sima Feizi	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
EPA 200.7 Rev. 4.4	01/28/2016	02/03/2016	Elliott D. Healy	02/05/2016	Joshua Ayres	1766295, 1766296, 1766297
	01/28/2016	02/04/2016	Elliott D. Healy	02/05/2016	Joshua Ayres	1766298, 1766299, 1766300, 1766301
EPA 200.8 Rev. 5.4	01/28/2016	02/03/2016	Elliott D. Healy	02/08/2016	Charles J. Peterson	1766295, 1766296, 1766297
	01/28/2016	02/04/2016	Elliott D. Healy	02/09/2016	Charles J. Peterson	1766298, 1766299, 1766300, 1766301
EPA 300.0 Rev. 2.1	01/28/2016			02/05/2016	Ping Hua	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
EPA 350.1 Rev. 2.0	01/28/2016			02/04/2016	Diana M. Turner	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 351.2 Rev. 2.0	01/28/2016	02/04/2016	Christopher Armour	02/05/2016	Bryan A. Werth	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 353.2 Rev. 2.0	01/28/2016			02/02/2016	Peter D. Kaus	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 365.1 Rev. 2.0	01/28/2016	02/02/2016	Christopher Armour	02/04/2016	Lipi Saha	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
EPA 365.1 Rev. 2.0 dissolved	01/28/2016			01/28/2016 13:15	Julia Storbeck	1766276
	01/28/2016			01/28/2016 13:25	Julia Storbeck	1766274
	01/28/2016			01/28/2016 13:26	Julia Storbeck	1766275
	01/28/2016			01/28/2016 13:27	Julia Storbeck	1766277
	01/28/2016			01/28/2016 13:28	Julia Storbeck	1766278
	01/28/2016			01/28/2016 13:29	Julia Storbeck	1766279
	01/28/2016			01/28/2016 13:30	Julia Storbeck	1766280
	01/28/2016			01/28/2016 14:44	Blanca Fach	1766260
	01/28/2016			01/28/2016 14:45	Blanca Fach	1766261
	01/28/2016			01/28/2016 14:48	Blanca Fach	1766262
SM 2120 B	01/28/2016			01/28/2016 14:49	Blanca Fach	1766263
	01/28/2016			01/28/2016 14:50	Blanca Fach	1766264
	01/28/2016			01/28/2016 14:51	Blanca Fach	1766265, 1766266
	01/28/2016			02/02/2016	Dale L. Simmons	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
	01/28/2016			02/01/2016	Sima Feizi	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2320 B-97	01/28/2016			02/01/2016	Sima Feizi	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2540 C-97	01/28/2016			01/29/2016	Dale L. Simmons	1766260, 1766261, 1766262, 1766263, 1766264, 1766265, 1766266
SM 2540 D-97	01/28/2016			02/03/2016	Sofia Elnemr	1766267, 1766268, 1766269, 1766270, 1766271, 1766272, 1766273
SM 4500 F-C-97	01/28/2016					
SM 5310 B-00	01/28/2016					