

Chemical Analysis Report

SE-DIST-2017-02-03-02

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

Event Description: **SMP-G2 Martin (1/5)**

Request ID: **RQ-2017-01-30-26**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

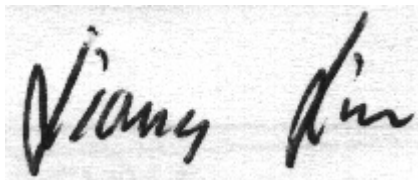
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-MAR-2017 15:18

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

Case Narrative

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

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

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: St. Lucie North Fork @ Veterans Park

Collection Date/Time: 02/02/2017 09:50

Field ID: G2SE0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869507	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	169		mg CaCO3/L	P319769	
	SM 2540 D-97	TSS	5	I	mg/L	P319665	
	SM 4500 F-C-97	Fluoride	0.62		mg F/L	P319507	
1869509	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P319564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P319685	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P319574	
1869511	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.083		mg P/L	P319280	
1869569	EPA 8321B	Sucralose**	0.10		ug/L	P319242	
	USGS O-2060-01	Diuron	0.077		ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0060	I	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	0.0046		ug/L	P319088	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Bessey Creek @ Murphy Rd.

Collection Date/Time: 02/02/2017 10:40

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869513	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	214		mg CaCO3/L	P319769	
	SM 2540 D-97	TSS	3	U	mg/L	P319665	
	SM 4500 F-C-97	Fluoride	0.43		mg F/L	P319507	
1869515	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P319774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.089		mg N/L	P319691	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P319574	
1869517	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P319281	
1869567	EPA 200.7 Rev. 4.4	Iron	230		ug/L	P319430	
	EPA 200.8 Rev. 5.4	Arsenic	3.21		ug/L	P319430	
		Cadmium	0.060	U	ug/L	P319430	
		Chromium	1.2	U	ug/L	P319430	
		Copper	2.8		ug/L	P319430	
		Lead	0.17	I	ug/L	P319430	
		Nickel	0.60	U	ug/L	P319430	
		Silver	0.030	U	ug/L	P319430	

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869567	EPA 200.8 Rev. 5.4	Zinc	7.2	I	ug/L	P319430	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: South Fork St. Lucie near Leighton Park

Collection Date/Time: 02/02/2017 11:05

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869514	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	152		mg CaCO3/L	P319769	
	SM 2540 D-97	TSS	8	I	mg/L	P319665	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P319507	
1869516	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P319774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P319691	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P319574	
1869518	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P319281	
1869568	EPA 200.7 Rev. 4.4	Iron	130	I	ug/L	P319430	
	EPA 200.8 Rev. 5.4	Arsenic	2.09		ug/L	P319430	
		Cadmium	0.060	U	ug/L	P319430	
		Chromium	1.2	U	ug/L	P319430	
		Copper	2.3	I	ug/L	P319430	
		Lead	0.25	I	ug/L	P319430	
		Nickel	1.5	I	ug/L	P319430	
		Silver	0.030	U	ug/L	P319430	
		Zinc	6.7	I	ug/L	P319430	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Danforth Creek @ Martin Hwy

Collection Date/Time: 02/02/2017 11:35

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869501	EPA 180.1 Rev. 2.0	Turbidity	6.1	A	NTU	P319284	
	EPA 300.0 Rev. 2.1	Chloride	53		mg Cl/L	P319795	
		Sulfate	26		mg SO4/L	P319797	
	SM 2120 B	Color (true)	75		PCU	P319288	
	SM 2320 B-97	Total Alkalinity	176		mg CaCO3/L	P319505	
	SM 2540 C-97	TDS	334	A	mg/L	P319593	
	SM 2540 D-97	TSS	4	I	mg/L	P319561	
	SM 4500 F-C-97	Fluoride	0.089	I	mg F/L	P319508	
1869502	EPA 350.1 Rev. 2.0	Ammonia-N	0.073		mg N/L	P320014	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P319294	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P319736	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P319350	

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869502	SM 5310 B-00	Organic Carbon	14		mg C/L	P319391	
1869503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P319286	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Manatee Pocket, Port Salerno

Collection Date/Time: 02/02/2017 12:05

Field ID: G2SE0012

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869498	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P319769	
	SM 2540 D-97	TSS	9	I	mg/L	P319665	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P319507	
1869499	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P319564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P319685	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P319574	
1869500	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P319280	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: South Fork St. Lucie @ Hosford Park

Collection Date/Time: 02/02/2017 12:35

Field ID: 28010478

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869508	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	220		mg CaCO3/L	P319769	
	SM 2540 D-97	TSS	7	I	mg/L	P319664	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P319507	
1869510	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P319564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P319691	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	12		mg C/L	P319391	
1869512	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P319281	
1869570	EPA 8321B	Sucralose**	0.081		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0050	I	ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0040	U	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	

Field ID: 28010478

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869570	USGS O-2060-01	Fluridone**	0.0019		ug/L	P319088	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: South Fork St. Lucie @ Halpatiokee

Collection Date/Time: 02/02/2017 13:10

Field ID: G2SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869495	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P319284	
	EPA 300.0 Rev. 2.1	Chloride	710		mg Cl/L	P319795	
		Sulfate	120		mg SO4/L	P319797	
	SM 2120 B	Color (true)	45	A	PCU	P319288	
	SM 2320 B-97	Total Alkalinity	260		mg CaCO3/L	P319770	
	SM 2540 C-97	TDS	1.64E+03		mg/L	P319592	
	SM 2540 D-97	TSS	4	I	mg/L	P319560	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P319772	
1869496	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P319639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P319294	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P319736	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P319350	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P319391	
1869497	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P319279	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Roebuck Creek @ Locks Rd

Collection Date/Time: 02/02/2017 13:35

Field ID: G2SE0029

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1869504	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P319284	
	SM 2320 B-97	Total Alkalinity	173		mg CaCO3/L	P319770	
	SM 2540 D-97	TSS	2	U	mg/L	P319664	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P319772	
1869505	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P319640	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P319296	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P319685	
	EPA 365.1 Rev. 2.0	Total-P	0.86		mg P/L	P319353	MS
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P319574	
1869506	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.82		mg P/L	P319280	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319284

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319430

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319430

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319795

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319797

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319564

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319640

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319774

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320014

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319294

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319296

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319691

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319736

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319350

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319353

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319279

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319280

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319286

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P319288

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P319505

Component	Result	Code	Units
Total Alkalinity	1.9	I	mg CaCO3/L

Reference Method: SM 2320 B-97
Batch ID: P319769

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

Reference Method: SM 2320 B-97
Batch ID: P319770

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P319592

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P319593

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319560

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319561

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319665

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319507

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P319772

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P319391

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

Reference Method: SM 5310 B-00
Batch ID: P319574

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

Reference Method: USGS O-2060-01
Batch ID: P319088

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319430

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319430

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.9		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	96.9		P	85 - 115
Copper	95.3		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	96.5		P	85 - 115
Silver	96.0		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319795

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319564

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: P319639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319640

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319774

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320014

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319294

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319296

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319353

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319279

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319280

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319286

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	75.7		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P319505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P319769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P319770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P319507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P319772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P319391

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

Reference Method: SM 5310 B-00
Batch ID: P319574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P319088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	119		P	40 - 140
Carbamazepine	120		P	40 - 140
Diuron	87.6		P	40 - 140
Fenuron	98.4		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P319088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	90.0		P	40 - 140
Imidacloprid	106		P	40 - 160
Linuron	88.8		P	40 - 140
Primidone	98.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869567	Iron	91.3	91.9	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869567	Arsenic	123	116	P/P	70 - 130
1869567	Cadmium	112	110	P/P	70 - 130
1869567	Chromium	101	97.2	P/P	70 - 130
1869567	Copper	103	98.7	P/P	70 - 130
1869567	Lead	116	113	P/P	70 - 130
1869567	Nickel	113	106	P/P	70 - 130
1869567	Silver	105	97.9	P/P	70 - 130
1869567	Zinc	110	106	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869285	Chloride	96.1		P	90 - 110
1869527	Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869285	Sulfate	92.8		P	90 - 110
1869527	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869510	Ammonia-N	97.7	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870256	Ammonia-N	96.6	94.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869505	Ammonia-N	90.8	92.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869516	Ammonia-N	96.0	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869334	Kjeldahl Nitrogen	96.1	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869346	Kjeldahl Nitrogen	94.0	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866814	NO2NO3-N	101	101	P/P	90 - 110
1866814	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869510	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869502	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869334	Total-P	92.2	95.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869348	Total-P	90.0	90.4	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869653	O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869349	O-Phosphate-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869517	O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869503	O-Phosphate-P	99.4	99.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P319242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870854	Sucralose	84.3	87.4	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P319507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869508	Fluoride	97.8	99.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P319772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870218	Fluoride	104	102	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P319391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869258	Organic Carbon	93.6	93.7	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P319574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869346	Organic Carbon	92.8	95.1	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P319088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869371	Acetaminophen	85.6	89.2	P/P	40 - 140
1869371	Carbamazepine	93.2	93.6	P/P	40 - 140
1869371	Diuron	71.2	72.0	P/P	40 - 140
1869371	Fenuron	78.4	80.8	P/P	40 - 140
1869371	Fluridone	70.4	72.8	P/P	40 - 140
1869371	Imidacloprid	148	146	P/P	40 - 160
1869371	Linuron	75.6	88.0	P/P	40 - 140
1869371	Primidone	83.6	82.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869501	Turbidity	1.16	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869567	Iron	0.589	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869567	Arsenic	5.95	Spike	P	0 - 20
1869567	Cadmium	2.23	Spike	P	0 - 20
1869567	Chromium	3.88	Spike	P	0 - 20
1869567	Copper	3.81	Spike	P	0 - 20
1869567	Lead	3.19	Spike	P	0 - 20
1869567	Nickel	5.87	Spike	P	0 - 20
1869567	Silver	6.68	Spike	P	0 - 20
1869567	Zinc	2.99	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869527	Chloride	0.163	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869527	Sulfate	2.86	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869510	Ammonia-N	0.0216	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870256	Ammonia-N	1.72	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869505	Ammonia-N	1.06	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869516	Ammonia-N	7.63	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871823	Ammonia-N	0.0470	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869334	Kjeldahl Nitrogen	5.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869346	Kjeldahl Nitrogen	0.0340	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866814	NO2NO3-N	0.277	Spike	P	0 - 15

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869510	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869502	NO2NO3-N	1.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869334	Total-P	2.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869348	Total-P	0.546	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869653	O-Phosphate-P	0.930	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869349	O-Phosphate-P	1.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869517	O-Phosphate-P	0.513	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869503	O-Phosphate-P	0.397	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P319242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870854	Sucralose	3.61	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P319288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869495	Color (true)	0.492	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P319505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869073	Total Alkalinity	0.321	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P319769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869094	Total Alkalinity	0.125	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P319770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870218	Total Alkalinity	0.0924	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P319592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869283	TDS	0.707	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P319593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869501	TDS	2.40	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869508	Fluoride	0.986	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P319508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869073	Fluoride	0.947	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P319772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870218	Fluoride	1.48	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P319391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869258	Organic Carbon	0.0980	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P319574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869346	Organic Carbon	2.12	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P319088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869371	Acetaminophen	4.12	Spike	P	0 - 30
1869371	Carbamazepine	0.428	Spike	P	0 - 30
1869371	Diuron	1.12	Spike	P	0 - 30
1869371	Fenuron	3.02	Spike	P	0 - 30
1869371	Fluridone	3.35	Spike	P	0 - 30
1869371	Imidacloprid	1.09	Spike	P	0 - 30
1869371	Linuron	15.2	Spike	P	0 - 30
1869371	Primidone	1.93	Spike	P	0 - 30

Quality Assurance Report Precision

* 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 Surrogates

Lab Sample ID: 1869569
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	82.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	103	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	85.8	P	40 - 160
USGS O-2060-01	Diuron-d6	53.6	P	40 - 150
USGS O-2060-01	Primidone-d5	67.8	P	40 - 150

Lab Sample ID: 1869570
Field Sample ID: 28010478

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	93.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	90.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	83.8	P	40 - 160
USGS O-2060-01	Diuron-d6	50.2	P	40 - 150
USGS O-2060-01	Primidone-d5	65.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74270
Included Lab Sample IDs: 1869497, 1869500, 1869506, 1869511, 1869512, 1869517, 1869518

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	97.9	P/P	90 - 110
O-Phosphate-P	98.7	98.9	P/P	90 - 110
O-Phosphate-P	99.8	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74271
Included Lab Sample IDs: 1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74272
Included Lab Sample IDs: 1869503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A74273

Included Lab Sample IDs: 1869495, 1869501

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74307

Included Lab Sample IDs: 1869495, 1869501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.8	100	P/P	90 - 110
Chloride	100	98.4	P/P	90 - 110
Sulfate	92.5	97.2	P/P	90 - 110
Sulfate	96.2	92.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74311

Included Lab Sample IDs: 1869496, 1869502, 1869510

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74315

Included Lab Sample IDs: 1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	96.3	P/P	90 - 110
Kjeldahl Nitrogen	96.3	95.3	P/P	90 - 110
Kjeldahl Nitrogen	96.8	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74336

Included Lab Sample IDs: 1869496, 1869502, 1869505, 1869509, 1869516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	96.7	P/P	90 - 110
Total-P	97.2	99.2	P/P	90 - 110
Total-P	98.4	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74347

Included Lab Sample IDs: 1869499, 1869510, 1869515

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74348

Included Lab Sample IDs: 1869501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A74348

Included Lab Sample IDs: 1869498, 1869501, 1869507, 1869508, 1869513, 1869514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.5	P/P	90 - 110
Fluoride	98.5	97.6	P/P	90 - 110
Fluoride	99.5	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74364

Included Lab Sample IDs: 1869499, 1869509, 1869510

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

Reference Method: SM 5310 B-00

Run ID: A74366

Included Lab Sample IDs: 1869499, 1869505, 1869509, 1869515, 1869516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	96.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A74387

Included Lab Sample IDs: 1869567, 1869568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	92.6	95.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74388

Included Lab Sample IDs: 1869496, 1869505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.8	96.2	P/P	90 - 110
Ammonia-N	98.6	95.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A74390

Included Lab Sample IDs: 1869569, 1869570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	103	134	P/P	60 - 150
Carbamazepine	96.0	128	P/P	60 - 150
Diuron	105	118	P/P	60 - 150
Fenuron	105	115	P/P	60 - 150
Fluridone	102	107	P/P	60 - 150
Imidacloprid	94.0	93.6	P/P	60 - 150
Linuron	98.4	86.8	P/P	60 - 150
Primidone	94.4	104	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74410

Included Lab Sample IDs: 1869499, 1869505, 1869509, 1869510, 1869515, 1869516

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

Reference Method: EPA 8321B

Run ID: A74419

Included Lab Sample IDs: 1869569, 1869570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.9	119	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74430

Included Lab Sample IDs: 1869496, 1869502

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

Reference Method: SM 2320 B-97

Run ID: A74444

Included Lab Sample IDs: 1869495, 1869498, 1869504, 1869507, 1869508, 1869513, 1869514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74444

Included Lab Sample IDs: 1869495, 1869504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74447

Included Lab Sample IDs: 1869515, 1869516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	96.9	P/P	90 - 110
Ammonia-N	92.7	93.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74538

Included Lab Sample IDs: 1869502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.0	96.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A74625
 Included Lab Sample IDs: 1869567, 1869568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	104	108	P/P	90 - 110
Cadmium	106	109	P/P	90 - 110
Chromium	104	108	P/P	90 - 110
Copper	102	107	P/P	90 - 110
Lead	103	107	P/P	90 - 110
Nickel	103	108	P/P	90 - 110
Zinc	104	108	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A74697
 Included Lab Sample IDs: 1869567, 1869568

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.16	
EPA 200.7 Rev. 4.4	Iron	100		91.3	91.9			0.589
EPA 200.8 Rev. 5.4	Arsenic	95.9		123	116			5.95
	Cadmium	97.8		112	110			2.23
	Chromium	96.9		101	97.2			3.88
	Copper	95.3		98.7	103			3.81
	Lead	97.6		116	113			3.19
	Nickel	96.5		113	106			5.87
	Silver	96.0		105	97.9			6.68
	Zinc	97.2		110	106			2.99
EPA 300.0 Rev. 2.1	Chloride	98.3		96.5	96.1		0.163	
	Sulfate	94.9		95.6	92.8		2.86	
EPA 350.1 Rev. 2.0	Ammonia-N	100		97.7	97.7			0.0216
	Ammonia-N	97.0		96.6	94.6			1.72
	Ammonia-N	99.3		90.8	92.7			1.06
	Ammonia-N	95.8		96.0	105			7.63
	Ammonia-N	99.0						0.0470
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.1		96.1	102			5.25
	Kjeldahl Nitrogen	100		94.0	94.1			0.0340
EPA 353.2 Rev. 2.0	NO2NO3-N	100		101	101	101		0.277 RSD
	NO2NO3-N	106		104	104			0.0
	NO2NO3-N	105		106	107			1.10
EPA 365.1 Rev. 2.0	Total-P	92.2		92.2	95.4			2.51
	Total-P	95.2		90.0	90.4			0.546
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		99.3	100			0.930
	O-Phosphate-P	105		103	102			1.37

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	101	100		0.513
	O-Phosphate-P	102	99.4	99.9		0.397
EPA 8321B	Sucralose	75.7	84.3	87.4		3.61
SM 2120 B	Color (true)				0.492	
SM 2320 B-97	Total Alkalinity	103			0.321	
	Total Alkalinity	103			0.125	
	Total Alkalinity	103			0.0924	
SM 2540 C-97	TDS				0.707	
	TDS				2.40	
SM 4500 F-C-97	Fluoride	97.4	97.8	99.2		0.986
	Fluoride	97.4				0.947
	Fluoride	100	104	102		1.48
SM 5310 B-00	Organic Carbon	98.6	93.6	93.7		0.0980
	Organic Carbon	97.4	92.8	95.1		2.12
USGS O-2060-01	Acetaminophen	119	85.6	89.2		4.12
	Carbamazepine	120	93.2	93.6		0.428
	Diuron	87.6	71.2	72.0		1.12
	Fenuron	98.4	78.4	80.8		3.02
	Fluridone	90.0	70.4	72.8		3.35
	Imidacloprid	106	148	146		1.09
	Linuron	88.8	75.6	88.0		15.2
	Primidone	98.4	83.6	82.0		1.93

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1869567, 1869568
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1869567, 1869568
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1869495, 1869501
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1869495, 1869501
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1869497, 1869500, 1869503, 1869506, 1869511, 1869512, 1869517, 1869518
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1869569, 1869570
SM 2120 B / E31780	True Color measured at 450 nm	1869495, 1869501
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1869495, 1869501
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1869569, 1869570

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	02/03/2017			02/03/2017 16:38	Julie Michelle Frank	1869495, 1869498, 1869501, 1869504, 1869507, 1869508, 1869513, 1869514
EPA 200.7 Rev. 4.4	02/03/2017	02/07/2017	Elliott D. Healy	02/09/2017	Joshua Ayres	1869567, 1869568
EPA 200.8 Rev. 5.4	02/03/2017	02/07/2017	Elliott D. Healy	02/21/2017	Betina Topolski	1869567, 1869568
	02/03/2017	02/07/2017	Elliott D. Healy	02/23/2017	Betina Topolski	1869567, 1869568
EPA 300.0 Rev. 2.1	02/03/2017			02/09/2017	Ping Hua	1869495, 1869501
EPA 350.1 Rev. 2.0	02/03/2017			02/08/2017	Sofia Elnemr	1869499, 1869509, 1869510
	02/03/2017			02/09/2017	Sofia Elnemr	1869496, 1869505
	02/03/2017			02/10/2017	Sofia Elnemr	1869515, 1869516
	02/03/2017			02/16/2017	Sofia Elnemr	1869502
EPA 351.2 Rev. 2.0	02/03/2017	02/06/2017	Adrian Shelby	02/07/2017	Joseph Suarez	1869496, 1869499, 1869502, 1869505, 1869509, 1869510, 1869515, 1869516
EPA 353.2 Rev. 2.0	02/03/2017			02/10/2017	Virginia P. Brown	1869499, 1869505, 1869509, 1869510, 1869515, 1869516
	02/03/2017			02/13/2017	Beverly Y. Sanders	1869496, 1869502
EPA 365.1 Rev. 2.0	02/03/2017	02/06/2017	Vijayalakshmi Reddy	02/07/2017	Lipi Saha	1869496, 1869502, 1869505, 1869509, 1869516
	02/03/2017	02/06/2017	Vijayalakshmi Reddy	02/08/2017	Lipi Saha	1869499, 1869510, 1869515
EPA 365.1 Rev. 2.0 dissolved	02/03/2017			02/03/2017 15:51	Julia Storbeck	1869517
	02/03/2017			02/03/2017 15:56	Julia Storbeck	1869497
	02/03/2017			02/03/2017 16:16	Julia Storbeck	1869500
	02/03/2017			02/03/2017 16:18	Julia Storbeck	1869512, 1869518
	02/03/2017			02/03/2017 16:22	Julia Storbeck	1869506
	02/03/2017			02/03/2017 16:29	Julia Storbeck	1869511
	02/03/2017			02/03/2017 17:34	Julia Storbeck	1869503
EPA 8321B	02/03/2017	02/09/2017	Mohammad Ghaffari	02/10/2017	Mohammad Ghaffari	1869569, 1869570
SM 2120 B	02/03/2017			02/03/2017 17:37	Julie Michelle Frank	1869495
	02/03/2017			02/03/2017 17:38	Julie Michelle Frank	1869501
SM 2320 B-97	02/03/2017			02/08/2017	Dale L. Simmons	1869501
	02/03/2017			02/14/2017	Dale L. Simmons	1869495, 1869498, 1869504, 1869507, 1869508, 1869513, 1869514
SM 2540 C-97	02/03/2017			02/06/2017	Christopher Armour	1869495, 1869501
SM 2540 D-97	02/03/2017			02/06/2017	Christopher Armour	1869495, 1869501
	02/03/2017			02/08/2017	Blanca Fach	1869498, 1869504, 1869507, 1869508, 1869513, 1869514
SM 4500 F-C-97	02/03/2017			02/07/2017	Dale L. Simmons	1869507, 1869508, 1869513
	02/03/2017			02/08/2017	Dale L. Simmons	1869498, 1869501, 1869514
	02/03/2017			02/14/2017	Dale L. Simmons	1869495, 1869504
SM 5310 B-00	02/03/2017			02/06/2017	Julie Michelle Frank	1869496, 1869502, 1869510
	02/03/2017			02/08/2017	Julie Michelle Frank	1869499, 1869505, 1869509, 1869515, 1869516
USGS O-2060-01	02/03/2017	02/09/2017	Hoor Shaik	02/09/2017	Juyoung Kim	1869569

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
USGS O-2060-01	02/03/2017	02/09/2017	Hoor Shaik	02/10/2017	Juyoung Kim	1869570