

Chemical Analysis Report

WQAP-2017-10-05-02

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

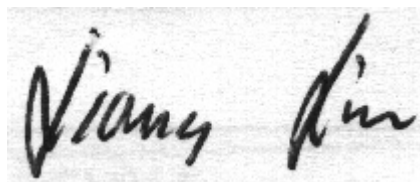
Event Description: **Yucca & 3 Alligators**
Request ID: **RQ-2017-10-02-11**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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2295 Victoria Ave.
Suite 364
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 26-OCT-2017 11:00

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: Alligator Creek North Prong above CR768

Collection Date/Time: 10/04/2017 10:55

Field ID: G2SD100417-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934654	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P333111	
		Sulfate	20		mg SO4/L	P333114	
	SM 2120 B	Color (true)	70		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	89		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	184		mg/L	P333146	
	SM 2540 D-97	TSS	5	I	mg/L	P333008	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P333350	
1934656	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P333237	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P333308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P333266	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333409	
1934658	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P332849	
1934677	EPA 200.7 Rev. 4.4	Calcium	43.7		mg/L	P332965	
		Iron	1.19E+03		ug/L	P332965	
		Magnesium	3.15		mg/L	P332965	
		Potassium	0.63	I	mg/L	P332965	
		Sodium	13.4		mg/L	P332965	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P332965	
		Arsenic	1.41		ug/L	P332965	
		Cadmium	0.020	U	ug/L	P332965	
		Chromium	0.40	U	ug/L	P332965	
		Copper	0.20	U	ug/L	P332965	
		Lead	0.31		ug/L	P332965	
		Nickel	0.31	I	ug/L	P332965	
		Silver	0.010	U	ug/L	P332965	

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: Alligator Creek North Prong above CR768

Collection Date/Time: 10/04/2017 10:55

Field ID: G2SD100417-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934675	EPA 8321B	Sucralose**	0.046		ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.047		ug/L	P332779	
		Diuron	8.0E-04	U	ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	8.0E-04	U	ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.047		ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	

Field ID: G2SD100417-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934675	USGS O-2060-01	Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	4.0E-04	U	ug/L	P332779	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Alligator Creek South Branch @ SR768

Collection Date/Time: 10/04/2017 10:30

Field ID: G2SD100417-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934655	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	9.1		mg Cl/L	P333111	
		Sulfate	0.86		mg SO4/L	P333114	
	SM 2120 B	Color (true)	87		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	56		mg/L	P333146	
	SM 2540 D-97	TSS	4	I	mg/L	P333008	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P333350	
1934657	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P333237	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P333308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P333266	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P333409	
1934659	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332853	
1934678	EPA 200.7 Rev. 4.4	Calcium	8.55		mg/L	P332965	
		Iron	340		ug/L	P332965	
		Magnesium	1.36		mg/L	P332965	
		Potassium	0.44	I	mg/L	P332965	
		Sodium	5.1		mg/L	P332965	
		Zinc	5.0	U	ug/L	P332965	
	EPA 200.8 Rev. 5.4	Arsenic	0.59		ug/L	P332965	
		Cadmium	0.020	U	ug/L	P332965	
		Chromium	0.40	U	ug/L	P332965	
		Copper	0.25	I	ug/L	P332965	
		Lead	0.19	I	ug/L	P332965	
		Nickel	0.20	U	ug/L	P332965	
		Silver	0.010	U	ug/L	P332965	

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: Alligator Creek South Branch @ SR768

Collection Date/Time: 10/04/2017 10:30

Field ID: G2SD100417-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934676	EPA 8321B	Sucralose**	0.012	I	ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332779	

Field ID: G2SD100417-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934676	USGS O-2060-01	Diuron	8.0E-04	U	ug/L	P332779	MS
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	8.0E-04	U	ug/L	P332779	
		Bentazon	8.0E-04	U	ug/L	P332779	
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	
		MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	4.0E-04	U	ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0040	U	ug/L	P332779	
		Fluridone**	4.0E-04	U	ug/L	P332779	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Yucca Pen Creek @ Burnt Store Rd

Collection Date/Time: 10/04/2017 09:50

Field ID: G2SD100417-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934645	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P332814	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P333111	
		Sulfate	1.8		mg SO4/L	P333114	
	SM 2120 B	Color (true)	100		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	92		mg/L	P333146	
	SM 2540 D-97	TSS	2	I	mg/L	P333005	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P333350	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P333236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P333128	
1934648	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P333211	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P333409	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	I	mg P/L	P332849	
	dissolved						
1934651	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	I	mg P/L	P332849	

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: 2081 @ Burnt Store Road

Collection Date/Time: 10/04/2017 10:15

Field ID: G2SD100417-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934646	EPA 180.1 Rev. 2.0	Turbidity	5.2	A	NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P333111	
		Sulfate	8.4		mg SO4/L	P333114	
	SM 2120 B	Color (true)	120		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	138		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	227		mg/L	P333146	
	SM 2540 D-97	TSS	8	I	mg/L	P333008	

Field ID: G2SD100417-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934646	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P333350	
1934649	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P333236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P333308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P333211	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P333409	
1934652	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P332849	

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: Alligator Creek North Prong-dup

Collection Date/Time: 10/04/2017 11:00

Field ID: G2SD100417-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934647	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P333111	
		Sulfate	20		mg SO4/L	P333114	
	SM 2120 B	Color (true)	69		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	89		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	183		mg/L	P333146	
	SM 2540 D-97	TSS	4	I	mg/L	P333008	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P333350	
1934650	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P333236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P333308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.051		mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P333266	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333409	
1934653	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P332849	
1934839	EPA 200.7 Rev. 4.4	Calcium	42.8		mg/L	P333081	
		Iron	1.18E+03		ug/L	P333081	
		Magnesium	3.15		mg/L	P333081	
		Potassium	0.66	I	mg/L	P333081	
		Sodium	14.4		mg/L	P333081	
		Zinc	5.0	U	ug/L	P333081	
	EPA 200.8 Rev. 5.4	Arsenic	1.48		ug/L	P333081	
		Cadmium	0.020	U	ug/L	P333081	
		Chromium	0.40	U	ug/L	P333081	
		Copper	0.24	I	ug/L	P333081	
		Lead	0.34		ug/L	P333081	
		Nickel	0.32	I	ug/L	P333081	
		Silver	0.010	U	ug/L	P333081	

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: P332814

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332815

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332965

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: P333081

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: P332965

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333081

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333081

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

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
Batch ID: P333266

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

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

Reference Method: EPA 8321B
Batch ID: P332778

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332835

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 2540 C-97
Batch ID: P333146

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333005

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333008

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P333350

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P333409

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

Reference Method: USGS O-2060-01
 Batch ID: P332779

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P332965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	111		P	85 - 115
Iron	109		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.4		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P333081

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	108		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	104		P	85 - 115
Sodium	108		P	85 - 115
Zinc	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.9		P	85 - 115
Copper	96.5		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	98.0		P	85 - 115
Silver	96.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333081

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	107		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	105		P	85 - 115
Copper	103		P	85 - 115
Lead	104		P	85 - 115
Nickel	105		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

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: P333211

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

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

Reference Method: EPA 8321B
Batch ID: P332778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	101		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P333409

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

Reference Method: USGS O-2060-01
Batch ID: P332779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
Acetaminophen	103		P	30 - 150
Bentazon	43.4		P	30 - 150
Carbamazepine	126		P	40 - 150
Diuron	116		P	40 - 150
Fenuron	96.1		P	40 - 150
Fluridone	107		P	40 - 150
Imidacloprid	98.5		P	40 - 160
Linuron	95.6		P	40 - 150
MCP	121		P	40 - 150
Primidone	97.2		P	40 - 150
Triclopyr	125		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934357	Calcium	111		P	80 - 120
1934357	Iron	109		P	80 - 120
1934357	Magnesium	111		P	80 - 120
1934357	Potassium	101		P	80 - 120
1934357	Sodium	99.9		P	80 - 120
1934357	Zinc	104		P	80 - 120
1934494	Calcium	112	113	P/P	80 - 120
1934494	Iron	107	109	P/P	80 - 120
1934494	Magnesium	110	111	P/P	80 - 120
1934494	Potassium	104	105	P/P	80 - 120
1934494	Sodium	99.3		P	80 - 120
1934494	Zinc	105	106	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934736	Calcium	107		P	80 - 120
1934736	Iron	110		P	80 - 120
1934736	Magnesium	110		P	80 - 120
1934736	Potassium	105		P	80 - 120
1934736	Sodium	107		P	80 - 120
1934736	Zinc	103		P	80 - 120
1934911	Calcium	107		P	80 - 120
1934911	Iron	111	111	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934911	Magnesium	113	112	P/P	80 - 120
1934911	Potassium	106	106	P/P	80 - 120
1934911	Sodium	110	109	P/P	80 - 120
1934911	Zinc	105	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934357	Arsenic	101		P	80 - 120
1934357	Cadmium	102		P	80 - 120
1934357	Chromium	98.5		P	80 - 120
1934357	Copper	96.8		P	80 - 120
1934357	Lead	99.3		P	80 - 120
1934357	Nickel	98.1		P	80 - 120
1934357	Silver	95.6		P	80 - 120
1934494	Arsenic	100	101	P/P	80 - 120
1934494	Cadmium	100	102	P/P	80 - 120
1934494	Chromium	97.7	98.3	P/P	80 - 120
1934494	Copper	97.3	97.9	P/P	80 - 120
1934494	Lead	99.2	99.6	P/P	80 - 120
1934494	Nickel	98.1	98.6	P/P	80 - 120
1934494	Silver	95.5	95.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934736	Arsenic	106		P	80 - 120
1934736	Cadmium	109		P	80 - 120
1934736	Chromium	101		P	80 - 120
1934736	Copper	105		P	80 - 120
1934736	Lead	103		P	80 - 120
1934736	Nickel	103		P	80 - 120
1934736	Silver	104		P	80 - 120
1934911	Arsenic	106	100	P/P	80 - 120
1934911	Cadmium	107	103	P/P	80 - 120
1934911	Chromium	102	96.0	P/P	80 - 120
1934911	Copper	102	96.9	P/P	80 - 120
1934911	Lead	104	98.3	P/P	80 - 120
1934911	Nickel	104	97.8	P/P	80 - 120
1934911	Silver	103	98.5	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Chloride	96.1		P	90 - 110
1934627	Chloride	98.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Sulfate	93.8		P	90 - 110
1934627	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934534	Ammonia-N	101	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934656	Ammonia-N	102	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934537	Kjeldahl Nitrogen	99.9	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934650	Kjeldahl Nitrogen	101	95.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934648	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934649	Total-P	103	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934699	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934538	O-Phosphate-P	94.7	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934659	O-Phosphate-P	97.3	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P332778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	Sucralose	69.3	114	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934698	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934486	Organic Carbon	98.8	97.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	2,4-D	66.3	58.8	P/P	40 - 150
1934706	Acetaminophen	84.5	80.9	P/P	30 - 150
1934706	Bentazon	25.7	21.7	F/F	30 - 150
1934706	Carbamazepine	90.7	94.5	P/P	40 - 150
1934706	Diuron	76.1	79.7	P/P	40 - 150
1934706	Fenuron	82.5	90.8	P/P	40 - 150
1934706	Linuron	91.9	98.1	P/P	40 - 150
1934706	MCP	50.3	53.1	P/P	40 - 150
1934706	Primidone	105	107	P/P	40 - 150
1934706	Triclopyr	47.5	50.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934536	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934646	Turbidity	0.777	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P332965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934494	Calcium	1.29	Spike	P	0 - 20
1934494	Iron	1.31	Spike	P	0 - 20
1934494	Magnesium	1.22	Spike	P	0 - 20
1934494	Potassium	0.847	Spike	P	0 - 20
1934494	Sodium	0.643	Spike	P	0 - 20
1934494	Zinc	0.226	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P333081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934911	Calcium	0.532	Spike	P	0 - 20
1934911	Iron	0.0852	Spike	P	0 - 20
1934911	Magnesium	0.329	Spike	P	0 - 20
1934911	Potassium	0.429	Spike	P	0 - 20
1934911	Sodium	0.525	Spike	P	0 - 20
1934911	Zinc	0.0144	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P332965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934494	Arsenic	0.896	Spike	P	0 - 20
1934494	Cadmium	1.92	Spike	P	0 - 20
1934494	Chromium	0.616	Spike	P	0 - 20
1934494	Copper	0.629	Spike	P	0 - 20
1934494	Lead	0.390	Spike	P	0 - 20
1934494	Nickel	0.443	Spike	P	0 - 20
1934494	Silver	0.279	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P333081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934911	Arsenic	5.09	Spike	P	0 - 20
1934911	Cadmium	4.21	Spike	P	0 - 20
1934911	Chromium	5.93	Spike	P	0 - 20
1934911	Copper	4.97	Spike	P	0 - 20
1934911	Lead	5.38	Spike	P	0 - 20
1934911	Nickel	6.39	Spike	P	0 - 20
1934911	Silver	4.19	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Chloride	0.0361	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Sulfate	0.0383	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934534	Ammonia-N	0.924	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934656	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934537	Kjeldahl Nitrogen	2.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934650	Kjeldahl Nitrogen	3.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934648	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934649	Total-P	6.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934699	Total-P	0.261	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934538	O-Phosphate-P	0.870	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934659	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P332778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	Sucralose	30.9	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P332835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Color (true)	0.867	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Total Alkalinity	0.208	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P333146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934708	TDS	4.85	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P333409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934486	Organic Carbon	1.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P332779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	2,4-D	4.57	Spike	P	0 - 30
1934706	Acetaminophen	4.40	Spike	P	0 - 30
1934706	Bentazon	4.62	Spike	P	0 - 30
1934706	Carbamazepine	3.92	Spike	P	0 - 30
1934706	Diuron	3.96	Spike	P	0 - 30
1934706	Fenuron	9.55	Spike	P	0 - 30
1934706	Fluridone	4.22	Spike	P	0 - 30
1934706	Imidacloprid	2.56	Spike	P	0 - 30
1934706	Linuron	6.61	Spike	P	0 - 30
1934706	MCP	5.30	Spike	P	0 - 30
1934706	Primidone	1.90	Spike	P	0 - 30
1934706	Triclopyr	6.44	Spike	P	0 - 30

* 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: 1934675
Field Sample ID: G2SD100417-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	75.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.9	P	30 - 160
EPA 8321B	Diuron-d6	61.0	P	30 - 160
EPA 8321B	Primidone-d5	94.7	P	30 - 160
EPA 8321B	Sucralose-d6	77.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	58.9	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	75.3	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	87.9	P	30 - 160
USGS O-2060-01	Diuron-d6	61.0	P	30 - 160
USGS O-2060-01	Primidone-d5	94.7	P	30 - 160
USGS O-2060-01	Sucralose-d6	77.4	P	40 - 160

Lab Sample ID: 1934676
Field Sample ID: G2SD100417-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	56.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.8	P	30 - 160
EPA 8321B	Diuron-d6	62.3	P	30 - 160
EPA 8321B	Primidone-d5	94.9	P	30 - 160
EPA 8321B	Sucralose-d6	88.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	56.3	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	56.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	90.8	P	30 - 160
USGS O-2060-01	Diuron-d6	62.3	P	30 - 160
USGS O-2060-01	Primidone-d5	94.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	88.4	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79366

Included Lab Sample IDs: 1934645, 1934646, 1934647, 1934654, 1934655

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

Reference Method: SM 2120 B

Run ID: A79372

Included Lab Sample IDs: 1934645, 1934646, 1934647, 1934654, 1934655

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79378

Included Lab Sample IDs: 1934651, 1934652, 1934653, 1934658, 1934659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	97.8	P/P	90 - 110
O-Phosphate-P	100	99.3	P/P	90 - 110
O-Phosphate-P	97.4	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79473

Included Lab Sample IDs: 1934645, 1934646, 1934647, 1934654, 1934655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	104	P/P	90 - 110
Chloride	103	102	P/P	90 - 110
Sulfate	101	99.4	P/P	90 - 110
Sulfate	99.4	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79474

Included Lab Sample IDs: 1934677, 1934678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	106	107	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Chromium	102	105	P/P	90 - 110
Copper	105	105	P/P	90 - 110
Silver	98.9	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79476

Included Lab Sample IDs: 1934677, 1934678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	106	104	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	98.7	98.3	P/P	90 - 110
Sodium	96.9	95.2	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79478

Included Lab Sample IDs: 1934675, 1934676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.4	92.3	P/P	50 - 150
Acetaminophen	87.9	94.5	P/P	60 - 150
Bentazon	89.7	87.1	P/P	50 - 150
Carbamazepine	96.4	96.0	P/P	60 - 150
Diuron	94.7	94.9	P/P	60 - 150
Fenuron	94.6	94.3	P/P	60 - 150
Fluridone	107	105	P/P	60 - 160
Imidacloprid	88.3	91.5	P/P	60 - 150
Linuron	99.8	103	P/P	60 - 150
MCP	98.1	98.6	P/P	50 - 150
Primidone	100	107	P/P	60 - 150
Triclopyr	98.2	103	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79506

Included Lab Sample IDs: 1934648, 1934649, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79510

Included Lab Sample IDs: 1934648, 1934649, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	99.7	P/P	90 - 110
Ammonia-N	99.7	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A79511

Included Lab Sample IDs: 1934675, 1934676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.1	94.8	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79522

Included Lab Sample IDs: 1934677, 1934678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	100	99.9	P/P	90 - 110
Nickel	102	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79524

Included Lab Sample IDs: 1934839

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79524

Included Lab Sample IDs: 1934839

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	102	101	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Zinc	97.2	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79526

Included Lab Sample IDs: 1934839

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	106	107	P/P	90 - 110
Cadmium	105	106	P/P	90 - 110
Chromium	106	106	P/P	90 - 110
Copper	106	106	P/P	90 - 110
Lead	104	105	P/P	90 - 110
Nickel	105	106	P/P	90 - 110
Silver	102	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79535

Included Lab Sample IDs: 1934645, 1934646, 1934647, 1934654, 1934655

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79535

Included Lab Sample IDs: 1934645, 1934646, 1934647, 1934654, 1934655

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79545

Included Lab Sample IDs: 1934648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.1	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79547

Included Lab Sample IDs: 1934649

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

Reference Method: SM 5310 B-00

Run ID: A79563

Included Lab Sample IDs: 1934648, 1934649, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A79563

Included Lab Sample IDs: 1934648, 1934649, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79564

Included Lab Sample IDs: 1934649, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.1	P/P	90 - 110
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79578

Included Lab Sample IDs: 1934648, 1934650, 1934656, 1934657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	102	P/P	90 - 110
Total-P	99.2	98.2	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						0.0	
	Turbidity						0.777	
EPA 200.7 Rev. 4.4	Calcium	111	111	112	113			1.29
	Calcium	106	107	107				0.532
	Iron	109	109	107	109			1.31
	Iron	108	110	111	111			0.0852
	Magnesium	111	111	110	111			1.22
	Magnesium	110	110	113	112			0.329
	Potassium	101	101	104	105			0.847
	Potassium	104	105	106	106			0.429
	Sodium	99.4	99.9	99.3				0.643
	Sodium	108	107	110	109			0.525
	Zinc	103	104	105	106			0.226
	Zinc	103	103	105	105			0.0144
EPA 200.8 Rev. 5.4	Arsenic	101	101	100	101			0.896
	Arsenic	107	106	106	100			5.09
	Cadmium	102	102	100	102			1.92
	Cadmium	106	109	107	103			4.21
	Chromium	98.9	98.5	97.7	98.3			0.616
	Chromium	105	101	102	96.0			5.93
	Copper	96.5	96.8	97.3	97.9			0.629
	Copper	103	105	102	96.9			4.97
	Lead	98.4	99.3	99.2	99.6			0.390

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
						LCS	SMP
EPA 200.8 Rev. 5.4	Lead	104	103	104	98.3		5.38
	Nickel	98.0	98.1	98.1	98.6		0.443
	Nickel	105	103	104	97.8		6.39
	Silver	96.6	95.6	95.5	95.8		0.279
	Silver	104	104	103	98.5		4.19
EPA 300.0 Rev. 2.1	Chloride	98.8	96.1	98.2		0.0361	
	Sulfate	96.0	93.8	95.6		0.0383	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	99.3			0.924
	Ammonia-N	98.7	102	99.8			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	99.9	96.8			2.06
	Kjeldahl Nitrogen	105	101	95.2			3.21
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	101	103	95.6			6.55
	Total-P	98.5	100	101			0.261
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	94.7	95.8			0.870
	O-Phosphate-P	103	97.3	98.5			1.23
EPA 8321B	Sucralose	101	69.3	114			30.9
SM 2120 B	Color (true)					0.867	
SM 2320 B-97	Total Alkalinity	103				0.208	
SM 2540 C-97	TDS					4.85	
SM 4500 F-C-97	Fluoride	102	101	101			0.482
SM 5310 B-00	Organic Carbon	103	98.8	97.6			1.11
USGS O-2060-01	2,4-D	109	66.3	58.8			4.57
	Acetaminophen	103	84.5	80.9			4.40
	Bentazon	43.4	25.7	21.7			4.62
	Carbamazepine	126	90.7	94.5			3.92
	Diuron	116	76.1	79.7			3.96
	Fenuron	96.1	82.5	90.8			9.55
	Fluridone	107					4.22
	Imidacloprid	98.5					2.56
	Linuron	95.6	91.9	98.1			6.61
	MCPP	121	50.3	53.1			5.30
	Primidone	97.2	105	107			1.90
	Triclopyr	125	47.5	50.6			6.44

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934645, 1934646, 1934647, 1934654, 1934655
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1934677, 1934678, 1934839
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1934677, 1934678, 1934839
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934645, 1934646, 1934647, 1934654, 1934655
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934645, 1934646, 1934647, 1934654, 1934655
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934648, 1934649, 1934650, 1934656, 1934657
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934648, 1934649, 1934650, 1934656, 1934657
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934648, 1934649, 1934650, 1934656, 1934657

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934648, 1934649, 1934650, 1934656, 1934657
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934651, 1934652, 1934653, 1934658, 1934659
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1934675, 1934676
SM 2120 B / E31780	True Color measured at 450 nm	1934645, 1934646, 1934647, 1934654, 1934655
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1934645, 1934646, 1934647, 1934654, 1934655
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934645, 1934646, 1934647, 1934654, 1934655
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934645, 1934646, 1934647, 1934654, 1934655
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934645, 1934646, 1934647, 1934654, 1934655
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934648, 1934649, 1934650, 1934656, 1934657
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1934675, 1934676
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1934675, 1934676

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	10/05/2017			10/05/2017 15:12	DeAsia Armster	1934645, 1934646, 1934647, 1934654, 1934655
EPA 200.7 Rev. 4.4	10/05/2017	10/09/2017	Elliott D. Healy	10/10/2017	Betina Topolski	1934677, 1934678
	10/05/2017	10/10/2017	Elliott D. Healy	10/12/2017	Betina Topolski	1934839
EPA 200.8 Rev. 5.4	10/05/2017	10/09/2017	Elliott D. Healy	10/10/2017	Nadine Brooks	1934677, 1934678
	10/05/2017	10/09/2017	Elliott D. Healy	10/13/2017	Nadine Brooks	1934677, 1934678
	10/05/2017	10/10/2017	Elliott D. Healy	10/12/2017	Nadine Brooks	1934839
EPA 300.0 Rev. 2.1	10/05/2017			10/09/2017	Julia Storbeck	1934645, 1934646, 1934647, 1934654, 1934655
EPA 350.1 Rev. 2.0	10/05/2017			10/11/2017	Sofia Elnemr	1934648, 1934649, 1934650, 1934656, 1934657
EPA 351.2 Rev. 2.0	10/05/2017	10/11/2017	Adrian Shelby	10/12/2017	Joseph Suarez	1934648
	10/05/2017	10/12/2017	Adrian Shelby	10/13/2017	Virginia P. Brown	1934649, 1934650, 1934656, 1934657
EPA 353.2 Rev. 2.0	10/05/2017			10/12/2017	Beverly Y. Sanders	1934648, 1934649, 1934650, 1934656, 1934657
EPA 365.1 Rev. 2.0	10/05/2017	10/12/2017	Sima Feizi	10/13/2017	Lipi Saha	1934649
	10/05/2017	10/12/2017	Sima Feizi	10/16/2017	Lipi Saha	1934648, 1934650, 1934656, 1934657
EPA 365.1 Rev. 2.0 dissolved	10/05/2017			10/05/2017 15:07	Megan Treadwell	1934659
	10/05/2017			10/05/2017 15:59	Megan Treadwell	1934652, 1934653
	10/05/2017			10/05/2017 16:00	Megan Treadwell	1934658
	10/05/2017			10/05/2017 16:20	Megan Treadwell	1934651
EPA 8321B	10/05/2017	10/11/2017	Juyoung Kim	10/11/2017	Juyoung Kim	1934675, 1934676
SM 2120 B	10/05/2017			10/05/2017 15:27	Tanya Welborn	1934645, 1934646
	10/05/2017			10/05/2017 15:28	Tanya Welborn	1934647
	10/05/2017			10/05/2017 15:29	Tanya Welborn	1934654
	10/05/2017			10/05/2017 15:30	Tanya Welborn	1934655
SM 2320 B-97	10/05/2017			10/13/2017	Dale L. Simmons	1934645, 1934646, 1934647, 1934654, 1934655
SM 2540 C-97	10/05/2017			10/06/2017	DeAsia Armster	1934645, 1934646, 1934647, 1934654, 1934655
SM 2540 D-97	10/05/2017			10/06/2017	DeAsia Armster	1934645, 1934646, 1934647, 1934654, 1934655
SM 4500 F-C-97	10/05/2017			10/13/2017	Dale L. Simmons	1934645, 1934646, 1934647, 1934654, 1934655
SM 5310 B-00	10/05/2017			10/13/2017	Ping Hua	1934648, 1934649, 1934650, 1934656, 1934657
USGS O-2060-01	10/05/2017	10/10/2017	Hoor Shaik	10/12/2017	Julie Michelle Frank	1934675, 1934676