

Chemical Analysis Report

SE-DIST-2017-07-21-01

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

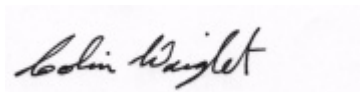
Event Description: **SMP-G2 Martin**
Request ID: **RQ-2017-07-17-13**
Customer: **SE-DIST**
Project ID: **SMP**

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
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 11-AUG-2017 12:44



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: South Fork St.Lucie @ Halpatiokee

Collection Date/Time: 07/20/2017 14:30

Field ID: G2SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915371	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P328944	
	EPA 300.0 Rev. 2.1	Chloride	76		mg Cl/L	P329010	
		Sulfate	17		mg SO4/L	P329012	
	SM 2120 B	Color (true)	180		PCU	P328937	
	SM 2320 B-97	Total Alkalinity	153		mg CaCO3/L	P329038	
	SM 2540 C-97	TDS	369	A	mg/L	P329360	
	SM 2540 D-97	TSS	2	IA	mg/L	P329365	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P329040	
1915372	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P329079	
1915373	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.088		mg P/L	P328963	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: South Fork St.Lucie near Leighton Park

Collection Date/Time: 07/20/2017 15:00

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915389	EPA 180.1 Rev. 2.0	Turbidity	17		NTU	P328945	
	SM 2320 B-97	Total Alkalinity	140		mg CaCO3/L	P329038	
	SM 2540 D-97	TSS	20		mg/L	P329369	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P329040	
1915391	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P329098	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P328968	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.075		mg N/L	P329209	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P329046	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P329079	
1915393	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P328948	
1915429	EPA 200.7 Rev. 4.4	Iron	660		ug/L	P329076	
		Zinc	5.2	I	ug/L	P329076	
	EPA 200.8 Rev. 5.4	Arsenic	3.70		ug/L	P329076	
		Cadmium	0.020	U	ug/L	P329076	
		Chromium	0.94	I	ug/L	P329076	
		Copper	3.21		ug/L	P329076	
		Lead	0.69		ug/L	P329076	
		Nickel	0.75	I	ug/L	P329076	
		Silver	0.010	U	ug/L	P329076	

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: 07/20/2017 15:15

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915377	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P328944	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P329010	
		Sulfate	67		mg SO4/L	P329012	
	SM 2120 B	Color (true)	65	A	PCU	P328937	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P329038	
	SM 2540 C-97	TDS	279		mg/L	P329360	
	SM 2540 D-97	TSS	6	I	mg/L	P329365	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P329040	
1915378	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P329079	
1915379	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P328948	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Bessey Creek @ Murphy Rd

Collection Date/Time: 07/20/2017 15:45

Field ID: G2SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915390	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P328945	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P329038	
	SM 2540 D-97	TSS	4	I	mg/L	P329369	
	SM 4500 F-C-97	Fluoride	0.096	I	mg F/L	P329040	
1915392	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P329079	
1915394	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P328948	
1915430	EPA 200.7 Rev. 4.4	Iron	940		ug/L	P329076	
		Zinc	5.0	U	ug/L	P329076	
	EPA 200.8 Rev. 5.4	Arsenic	4.37		ug/L	P329076	
		Cadmium	0.020	U	ug/L	P329076	
		Chromium	0.58	I	ug/L	P329076	
		Copper	1.16		ug/L	P329076	
		Lead	0.21		ug/L	P329076	
		Nickel	0.49	I	ug/L	P329076	
		Silver	0.010	U	ug/L	P329076	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: St.Lucie North Fork @ Veterans Park

Collection Date/Time: 07/20/2017 11:00

Field ID: G2SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915383	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	147		mg CaCO3/L	P329038	
	SM 2540 D-97	TSS	13		mg/L	P329369	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P329040	
1915385	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P329079	
1915387	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P328948	
1915420	EPA 8321B	Sucralose**	0.12		ug/L	P328877	
	USGS O-2060-01	2,4-D	0.16		ug/L	P329041	
		Diuron	0.086		ug/L	P329041	
		Fenuron	0.0080	U	ug/L	P329041	
		Imidacloprid	0.20		ug/L	P329041	MS
		Bentazon	0.0037		ug/L	P329041	
		Linuron	0.0040	U	ug/L	P329041	
		Acetaminophen**	0.0080	U	ug/L	P329041	
		MCPD	0.0020	U	ug/L	P329041	
		Carbamazepine**	0.0010	I	ug/L	P329041	
		Triclopyr**	0.0040	U	ug/L	P329041	
		Primidone**	0.0040	U	ug/L	P329041	
		Fluridone**	0.0058		ug/L	P329041	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Roebuck Creek @ Locks Rd

Collection Date/Time: 07/20/2017 12:10

Field ID: G2SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915380	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	144		mg CaCO3/L	P329038	
	SM 2540 D-97	TSS	3	I	mg/L	P329368	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P329040	
1915381	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P329079	
1915382	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.64		mg P/L	P328948	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Manatee Pocket, Port Salerno

Collection Date/Time: 07/20/2017 13:20

Field ID: G2SE0012

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915374	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P329082	
	SM 2540 D-97	TSS	9	I	mg/L	P329371	
	SM 4500 F-C-97	Fluoride	0.68		mg F/L	P329187	
1915375	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P329098	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P328968	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P329209	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P329046	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P329080	
1915376	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P328951	

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: 07/20/2017 13:50

Field ID: 28010478

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915384	EPA 180.1 Rev. 2.0	Turbidity	5.1	A	NTU	P328945	
	SM 2320 B-97	Total Alkalinity	153		mg CaCO3/L	P329038	
	SM 2540 D-97	TSS	6	IA	mg/L	P329369	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P329040	
1915386	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P329097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P328967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P329127	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P328994	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P329079	
1915388	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.098		mg P/L	P328948	
1915421	EPA 8321B	Sucralose**	0.58		ug/L	P328877	
	USGS O-2060-01	2,4-D	0.031		ug/L	P329041	
		Diuron	0.0040		ug/L	P329041	
		Fenuron	0.012	I	ug/L	P329041	
		Imidacloprid	0.036		ug/L	P329041	MS
		Bentazon	0.013		ug/L	P329041	
		Linuron	0.0040	U	ug/L	P329041	
		Acetaminophen**	0.0080	U	ug/L	P329041	
		MCP	0.0031	I	ug/L	P329041	
		Carbamazepine**	0.0015	I	ug/L	P329041	
		Triclopyr**	0.0040	U	ug/L	P329041	
		Primidone**	0.0040	U	ug/L	P329041	
		Fluridone**	4.8E-04	I	ug/L	P329041	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328944

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328945

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329076

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329076

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 300.0 Rev. 2.1
Batch ID: P329010

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329012

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328967

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329127

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328994

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328948

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P328877

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P328937

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329038

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

Reference Method: SM 2320 B-97
Batch ID: P329082

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

Reference Method: SM 2540 C-97
Batch ID: P329360

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329365

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329368

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329369

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329371

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P329040

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329079

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

Reference Method: SM 5310 B-00
Batch ID: P329080

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

Reference Method: USGS O-2060-01
Batch ID: P329041

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
MCPP	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: P329076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	107		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329076

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	101		P	85 - 115
Copper	99.1		P	85 - 115
Lead	99.8		P	85 - 115
Nickel	102		P	85 - 115
Silver	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329012

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328967

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329127

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

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: P328994

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: P329046

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328948

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

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

Reference Method: EPA 8321B
Batch ID: P328877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	63.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P329038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P329082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P329040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329079

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

Reference Method: SM 5310 B-00
Batch ID: P329080

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

Reference Method: USGS O-2060-01
Batch ID: P329041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	40 - 150
Acetaminophen	107		P	30 - 150
Bentazon	100		P	40 - 150
Carbamazepine	103		P	40 - 150
Diuron	97.3		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	99.5		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	101		P	40 - 150
MCPP	97.5		P	40 - 150
Primidone	112		P	40 - 150
Triclopyr	92.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915893	Iron	108		P	80 - 120
1915893	Zinc	106		P	80 - 120
1915965	Iron	108	109	P/P	80 - 120
1915965	Zinc	108	108	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915893	Arsenic	110		P	80 - 120
1915893	Cadmium	106		P	80 - 120
1915893	Chromium	93.2		P	80 - 120
1915893	Copper	98.7		P	80 - 120
1915893	Lead	103		P	80 - 120
1915893	Nickel	98.7		P	80 - 120
1915893	Silver	99.9		P	80 - 120
1915965	Arsenic	103	104	P/P	80 - 120
1915965	Cadmium	106	107	P/P	80 - 120
1915965	Chromium	98.6	99.5	P/P	80 - 120
1915965	Copper	101	102	P/P	80 - 120
1915965	Lead	99.9	99.8	P/P	80 - 120
1915965	Nickel	102	102	P/P	80 - 120
1915965	Silver	101	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915521	Chloride	98.7		P	90 - 110
1915523	Chloride	93.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915521	Sulfate	99.0		P	90 - 110
1915523	Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915372	Ammonia-N	108	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915326	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915381	Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915512	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914485	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915326	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915327	Total-P	99.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915313	O-Phosphate-P	95.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915332	O-Phosphate-P	94.2	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915535	O-Phosphate-P	94.9	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915262	Sucralose	45.6	55.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P329040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915531	Fluoride	99.9	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915321	Fluoride	97.6	97.6	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P329079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915372	Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P329080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915375	Organic Carbon	100	101	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P329041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915592	2,4-D	129	114	P/P	40 - 150
1915592	Acetaminophen	127	127	P/P	30 - 150
1915592	Bentazon	58.7	66.2	P/P	40 - 150
1915592	Carbamazepine	129	127	P/P	40 - 150
1915592	Fenuron	91.3	89.3	P/P	40 - 150
1915592	Fluridone	66.4	54.3	P/P	40 - 150
1915592	Imidacloprid	223	199	F/F	40 - 160
1915592	Linuron	105	98.1	P/P	40 - 150
1915592	MCP	120	105	P/P	40 - 150
1915592	Primidone	104	114	P/P	40 - 150
1915592	Triclopyr	122	106	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915318	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915384	Turbidity	1.38	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P329076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915965	Iron	0.667	Spike	P	0 - 20
1915965	Zinc	0.402	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P329076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915965	Arsenic	0.683	Spike	P	0 - 20
1915965	Cadmium	0.931	Spike	P	0 - 20
1915965	Chromium	0.834	Spike	P	0 - 20
1915965	Copper	1.12	Spike	P	0 - 20
1915965	Lead	0.107	Spike	P	0 - 20
1915965	Nickel	0.513	Spike	P	0 - 20
1915965	Silver	0.110	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915521	Chloride	0.961	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915521	Sulfate	1.69	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915372	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915326	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915381	Kjeldahl Nitrogen	0.620	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915512	Kjeldahl Nitrogen	1.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914485	NO2NO3-N	0.214	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915326	NO2NO3-N	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915381	Total-P	2.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915327	Total-P	1.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915313	O-Phosphate-P	1.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915332	O-Phosphate-P	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915535	O-Phosphate-P	2.19	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915262	Sucralose	19.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P328937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915377	Color (true)	2.42	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915531	Total Alkalinity	0.372	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P329082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915321	Total Alkalinity	0.00491	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915371	TDS	3.79	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P329040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915531	Fluoride	0.502	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915321	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P329079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915372	Organic Carbon	2.14	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P329080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915375	Organic Carbon	0.513	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P329041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915592	2,4-D	6.96	Spike	P	0 - 30
1915592	Acetaminophen	0.236	Spike	P	0 - 30
1915592	Bentazon	5.50	Spike	P	0 - 30
1915592	Carbamazepine	1.60	Spike	P	0 - 30
1915592	Diuron	15.1	Spike	P	0 - 30
1915592	Fenuron	2.21	Spike	P	0 - 30
1915592	Fluridone	13.4	Spike	P	0 - 30
1915592	Imidacloprid	9.12	Spike	P	0 - 30
1915592	Linuron	6.93	Spike	P	0 - 30
1915592	MCP	13.4	Spike	P	0 - 30
1915592	Primidone	9.31	Spike	P	0 - 30
1915592	Triclopyr	14.8	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: 1915420
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	70.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	159	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	159	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	115	P	30 - 160
USGS O-2060-01	Diuron-d6	89.8	P	30 - 160
USGS O-2060-01	Primidone-d5	101	P	30 - 160

Lab Sample ID: 1915421
Field Sample ID: 28010478

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	108	P	40 - 160
USGS O-2060-01	2,4-D-d3	154	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	145	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	98.9	P	30 - 160
USGS O-2060-01	Diuron-d6	81.5	P	30 - 160
USGS O-2060-01	Primidone-d5	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A77800
Included Lab Sample IDs: 1915371, 1915377

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77800

Included Lab Sample IDs: 1915371, 1915377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	105	103	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A77871

Included Lab Sample IDs: 1915371, 1915377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77872

Included Lab Sample IDs: 1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77873

Included Lab Sample IDs: 1915373, 1915376, 1915379, 1915382, 1915387, 1915388, 1915393, 1915394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	97.6	P/P	90 - 110
O-Phosphate-P	98.3	98.0	P/P	90 - 110
O-Phosphate-P	98.8	98.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77919

Included Lab Sample IDs: 1915371, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77919

Included Lab Sample IDs: 1915371, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.7	99.5	P/P	90 - 110
Fluoride	99.5	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77933

Included Lab Sample IDs: 1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	100	P/P	90 - 110
Kjeldahl Nitrogen	104	101	P/P	90 - 110
Kjeldahl Nitrogen	99.7	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A77939

Included Lab Sample IDs: 1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	103	P/P	90 - 110
Organic Carbon	105	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77941

Included Lab Sample IDs: 1915374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77945

Included Lab Sample IDs: 1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77953

Included Lab Sample IDs: 1915372, 1915378, 1915381, 1915385, 1915386, 1915392

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77954

Included Lab Sample IDs: 1915372, 1915378, 1915381, 1915385, 1915386, 1915392

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77971

Included Lab Sample IDs: 1915375, 1915391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110
Total-P	100	99.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77973

Included Lab Sample IDs: 1915429, 1915430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	104	105	P/P	90 - 110
Arsenic	105	104	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Cadmium	105	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77973

Included Lab Sample IDs: 1915429, 1915430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	96.7	100	P/P	90 - 110
Chromium	98.6	96.7	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	100	100	P/P	90 - 110
Lead	99.2	100	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Silver	99.3	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77975

Included Lab Sample IDs: 1915429, 1915430

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

Reference Method: SM 4500 F-C-97

Run ID: A77980

Included Lab Sample IDs: 1915374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77988

Included Lab Sample IDs: 1915375, 1915391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A78123

Included Lab Sample IDs: 1915420, 1915421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	60.8	66.1	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1915420, 1915421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	65.8	84.5	P/P	50 - 150
2,4-D	95.1	114	P/P	50 - 150
Acetaminophen	106	108	P/P	60 - 150
Acetaminophen	94.0	106	P/P	60 - 150
Bentazon	107	89.8	P/P	50 - 150
Bentazon	89.8	130	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1915420, 1915421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	93.9	96.6	P/P	60 - 150
Carbamazepine	96.6	104	P/P	60 - 150
Diuron	103	97.2	P/P	60 - 150
Diuron	112	103	P/P	60 - 150
Fenuron	112	108	P/P	60 - 150
Fenuron	99.6	112	P/P	60 - 150
Fluridone	102	95.8	P/P	60 - 160
Fluridone	95.8	102	P/P	60 - 160
Imidacloprid	115	104	P/P	60 - 150
Imidacloprid	94.4	115	P/P	60 - 150
Linuron	103	99.2	P/P	60 - 150
Linuron	119	103	P/P	60 - 150
MCP	110	94.4	P/P	50 - 150
MCP	94.4	113	P/P	50 - 150
Primidone	113	90.5	P/P	60 - 150
Primidone	98.8	113	P/P	60 - 150
Triclopyr	111	120	P/P	50 - 150
Triclopyr	117	111	P/P	50 - 150

* 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							1.38	
EPA 200.7 Rev. 4.4	Iron	107	108	108	109				0.667
	Zinc	104	106	108	108				0.402
EPA 200.8 Rev. 5.4	Arsenic	103	110	103	104				0.683
	Cadmium	105	106	106	107				0.931
	Chromium	101	93.2	98.6	99.5				0.834
	Copper	99.1	98.7	101	102				1.12
	Lead	99.8	103	99.9	99.8				0.107
	Nickel	102	98.7	102	102				0.513
	Silver	101	99.9	101	100				0.110
EPA 300.0 Rev. 2.1	Chloride	99.8	98.7	93.0				0.961	
	Sulfate	100	99.0	94.5				1.69	
EPA 350.1 Rev. 2.0	Ammonia-N	102	108	104					1.89
	Ammonia-N	103	104	106					1.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	104	105					0.620
	Kjeldahl Nitrogen	109	102	101					1.25
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100						0.214
	NO ₂ NO ₃ -N	102	104	102					1.37
EPA 365.1 Rev. 2.0	Total-P	101							2.42
	Total-P	101	99.3	101					1.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	95.4	96.9					1.56

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	94.2	96.0		1.89
	O-Phosphate-P	103	94.9	97.0		2.19
EPA 8321B	Sucralose	63.6	45.6	55.7		19.2
SM 2120 B	Color (true)				2.42	
SM 2320 B-97	Total Alkalinity	102			0.372	
	Total Alkalinity	102			0.0049	
SM 2540 C-97	TDS				3.79	
SM 4500 F-C-97	Fluoride	96.5	99.9	101		0.502
	Fluoride	96.5	97.6	97.6		0.0
SM 5310 B-00	Organic Carbon	103	103			2.14
	Organic Carbon	103	100	101		0.513
USGS O-2060-01	2,4-D	107	129	114		6.96
	Acetaminophen	107	127	127		0.236
	Bentazon	100	58.7	66.2		5.50
	Carbamazepine	103	129	127		1.60
	Diuron	97.3				15.1
	Fenuron	115	91.3	89.3		2.21
	Fluridone	99.5	66.4	54.3		13.4
	Imidacloprid	102	223	199		9.12
	Linuron	101	105	98.1		6.93
	MCPD	97.5	120	105		13.4
	Primidone	112	104	114		9.31
	Triclopyr	92.8	122	106		14.8

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1915429, 1915430
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1915429, 1915430
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1915371, 1915377
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1915371, 1915377
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1915373, 1915376, 1915379, 1915382, 1915387, 1915388, 1915393, 1915394
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1915420, 1915421
SM 2120 B / E31780	True Color measured at 450 nm	1915371, 1915377
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1915371, 1915377
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1915420, 1915421
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1915420, 1915421

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	07/21/2017			07/21/2017 15:46	DeAsia Armster	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
EPA 200.7 Rev. 4.4	07/21/2017	07/25/2017	Elliott D. Healy	07/26/2017	Betina Topolski	1915429, 1915430
EPA 200.8 Rev. 5.4	07/21/2017	07/25/2017	Elliott D. Healy	07/26/2017	Nadine Brooks	1915429, 1915430
EPA 300.0 Rev. 2.1	07/21/2017			07/21/2017	Julia Storbeck	1915371, 1915377
EPA 350.1 Rev. 2.0	07/21/2017			07/25/2017	Sofia Elnemr	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 351.2 Rev. 2.0	07/21/2017	07/24/2017	Adrian Shelby	07/25/2017	Joseph Suarez	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
EPA 353.2 Rev. 2.0	07/21/2017			07/26/2017	Beverly Y. Sanders	1915372, 1915378, 1915381, 1915385, 1915386, 1915392
	07/21/2017			07/27/2017	Beverly Y. Sanders	1915375, 1915391
EPA 365.1 Rev. 2.0	07/21/2017	07/24/2017	Vijayalakshmi Reddy	07/26/2017	Lipi Saha	1915372, 1915378, 1915381, 1915385, 1915386, 1915392
	07/21/2017	07/25/2017	Vijayalakshmi Reddy	07/26/2017	Lipi Saha	1915375, 1915391
EPA 365.1 Rev. 2.0 dissolved	07/21/2017			07/21/2017 15:14	Ping Hua	1915379
	07/21/2017			07/21/2017 15:15	Ping Hua	1915382
	07/21/2017			07/21/2017 15:16	Ping Hua	1915387
	07/21/2017			07/21/2017 15:17	Ping Hua	1915388
	07/21/2017			07/21/2017 15:36	Ping Hua	1915376
	07/21/2017			07/21/2017 15:43	Ping Hua	1915373
	07/21/2017			07/21/2017 15:53	Ping Hua	1915393
	07/21/2017			07/21/2017 15:54	Ping Hua	1915394
EPA 8321B	07/21/2017	07/27/2017	Julie Michelle Frank	07/27/2017	Mohammad Ghaffari	1915420, 1915421
SM 2120 B	07/21/2017			07/21/2017 15:13	Tanya Welborn	1915377
	07/21/2017			07/21/2017 15:28	Tanya Welborn	1915371
SM 2320 B-97	07/21/2017			07/25/2017	Dale L. Simmons	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
SM 2540 C-97	07/21/2017			07/26/2017	Yijie Li	1915371, 1915377
SM 2540 D-97	07/21/2017			07/26/2017	Yijie Li	1915371, 1915374, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
SM 4500 F-C-97	07/21/2017			07/25/2017	Dale L. Simmons	1915371, 1915377, 1915380, 1915383, 1915384, 1915389, 1915390
	07/21/2017			07/27/2017	Dale L. Simmons	1915374
SM 5310 B-00	07/21/2017			07/25/2017	Sofia Elnemr	1915372, 1915375, 1915378, 1915381, 1915385, 1915386, 1915391, 1915392
USGS O-2060-01	07/21/2017	07/25/2017	Hoor Shaik	08/01/2017	Juyoung Kim	1915420, 1915421
	07/21/2017	07/25/2017	Hoor Shaik	08/02/2017	Juyoung Kim	1915420