

Chemical Analysis Report

SO-DIST-2017-10-17-02

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

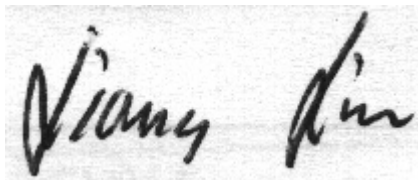
Event Description: **SMP: Peace River Streams**
Request ID: **RQ-2017-09-18-03**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Ben Paswater

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: Liang Lin, Environmental Administrator

Date Certified: 09-NOV-2017 10:03

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

Case Narrative

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

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

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: MYRTLE SLOUGH @ SR31

Collection Date/Time: 10/16/2017 09:35

Field ID: G3SD101617-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937174	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P333570	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P333661	
		Sulfate	21		mg SO4/L	P333663	
		Color (true)	250		PCU	P333511	
	SM 2320 B-97	Total Alkalinity	97		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	232		mg/L	P333869	
	SM 2540 D-97	TSS	13		mg/L	P333935	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P333742	
1937177	EPA 350.1 Rev. 2.0	Ammonia-N	0.45		mg N/L	P333893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P334270	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P333995	
	EPA 365.1 Rev. 2.0	Total-P	0.73		mg P/L	P333814	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P333990	
1937180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.48		mg P/L	P333505	
1937194	EPA 200.7 Rev. 4.4	Calcium	36.0		mg/L	P333716	
		Iron	1.73E+03		ug/L	P333716	
		Magnesium	8.32		mg/L	P333716	
		Potassium	9.4		mg/L	P333716	
		Sodium	16.1		mg/L	P333716	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P333716	
		Arsenic	2.13		ug/L	P333716	
		Cadmium	0.020	U	ug/L	P333716	
		Chromium	0.95	I	ug/L	P333716	
		Copper	3.64		ug/L	P333716	
		Lead	0.41		ug/L	P333716	
		Nickel	0.75	I	ug/L	P333716	
		Silver	0.010	U	ug/L	P333716	

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: MYRTLE 1995 @ PINE ISLAND ST.

Collection Date/Time: 10/16/2017 10:00

Field ID: G3SD101617-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937175	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P333570	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P333661	
		Sulfate	7.4		mg SO4/L	P333663	
		Color (true)	250		PCU	P333511	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	153		mg/L	P333869	
	SM 2540 D-97	TSS	4	I	mg/L	P333935	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P333742	
1937178	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P333893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P334270	MS

Field ID: G3SD101617-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937178	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P333995	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P333814	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P333990	
1937181	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P333505	
1937195	EPA 200.7 Rev. 4.4	Calcium	27.0		mg/L	P333716	
		Iron	860		ug/L	P333716	
		Magnesium	6.28		mg/L	P333716	
		Potassium	4.0		mg/L	P333716	
		Sodium	10.1		mg/L	P333716	
		Zinc	5.0	U	ug/L	P333716	
	EPA 200.8 Rev. 5.4	Arsenic	1.03		ug/L	P333716	
		Cadmium	0.020	U	ug/L	P333716	
		Chromium	0.42	I	ug/L	P333716	
		Copper	0.20	U	ug/L	P333716	
		Lead	0.19	I	ug/L	P333716	
		Nickel	0.20	U	ug/L	P333716	
		Silver	0.010	U	ug/L	P333716	

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: MYRTLE 1995 @ PINE ISLAND ST.

Collection Date/Time: 10/16/2017 10:00

Field ID: G3SD101617-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937192	EPA 8321B	Sucralose**	0.010	U	ug/L	P333553	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P333492	
		Diuron	0.026		ug/L	P333492	
		Fenuron	0.0080	U	ug/L	P333492	RPD
		Imidacloprid	0.036		ug/L	P333492	MS
		Bentazon	8.0E-04	UJ	ug/L	P333492	LCS, MS
		Linuron	0.0040	U	ug/L	P333492	
		Acetaminophen**	0.0080	U	ug/L	P333492	
		MCPD	0.0020	U	ug/L	P333492	
		Carbamazepine**	4.0E-04	U	ug/L	P333492	
		Triclopyr**	0.0040	U	ug/L	P333492	
		Primidone**	0.0040	U	ug/L	P333492	
		Fluridone**	4.0E-04	U	ug/L	P333492	

Ref. Method and Comment:

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Sample Location: HOG BAY @ CR 763

Collection Date/Time: 10/16/2017 10:30

Field ID: G3SD101617-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937168	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P333570	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P333661	

Field ID: G3SD101617-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937168	EPA 300.0 Rev. 2.1	Sulfate	57		mg SO4/L	P333663	
	SM 2120 B	Color (true)	160		PCU	P333511	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	463		mg/L	P333869	
	SM 2540 D-97	TSS	3	I	mg/L	P333935	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P333742	
1937170	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P333892	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P334270	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P333994	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P333608	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P333990	
1937172	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P333505	

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: SHELL CR. @ SR 31

Collection Date/Time: 10/16/2017 09:10

Field ID: G3SD101617-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937176	EPA 180.1 Rev. 2.0	Turbidity	32		NTU	P333570	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P333661	
		Sulfate	64		mg SO4/L	P333663	
		Color (true)	69		PCU	P333513	
	SM 2320 B-97	Total Alkalinity	194		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	553		mg/L	P333869	
	SM 2540 D-97	TSS	26		mg/L	P333935	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P333742	
1937179	EPA 350.1 Rev. 2.0	Ammonia-N	0.36		mg N/L	P333893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P334270	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P333995	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P333814	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P333990	
1937182	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P333505	
1937196	EPA 200.7 Rev. 4.4	Calcium	101		mg/L	P333716	
		Iron	1.94E+03		ug/L	P333716	
		Magnesium	14.7		mg/L	P333716	
		Potassium	6.5		mg/L	P333716	
		Sodium	81.5		mg/L	P333716	
		Zinc	5.0	U	ug/L	P333716	
	EPA 200.8 Rev. 5.4	Arsenic	1.58		ug/L	P333716	
		Cadmium	0.020	U	ug/L	P333716	
		Chromium	1.6	I	ug/L	P333716	
		Copper	1.58		ug/L	P333716	
		Lead	0.47		ug/L	P333716	
		Nickel	1.26		ug/L	P333716	

Field ID: G3SD101617-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937196	EPA 200.8 Rev. 5.4	Silver	0.010	U	ug/L	P333716	

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: BOBCAT CREEK IN PRESERVE EAST

Collection Date/Time: 10/16/2017 11:30

Field ID: G3SD101617-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937169	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P333570	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P333661	
		Sulfate	7.9		mg SO4/L	P333663	
	SM 2120 B	Color (true)	310		PCU	P333511	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	162		mg/L	P333869	
	SM 2540 D-97	TSS	6	I	mg/L	P333935	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P333742	
1937171	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P333892	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P334270	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P333994	
	EPA 365.1 Rev. 2.0	Total-P	0.63		mg P/L	P333608	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P333990	
1937173	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.51		mg P/L	P333505	

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: HAWTHORNE CREEK @ REYNOLDS ST.

Collection Date/Time: 10/16/2017 10:45

Field ID: G3SD101617-7

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937193	EPA 8321B	Sucralose**	0.047		ug/L	P333553	
	USGS O-2060-01	2,4-D	0.069		ug/L	P333492	
		Diuron	0.25		ug/L	P333492	
		Fenuron	0.042		ug/L	P333492	RPD
		Imidacloprid	0.75		ug/L	P333492	MS
		Bentazon	8.0E-04	UJ	ug/L	P333492	LCS, MS
		Linuron	0.0040	U	ug/L	P333492	
		Acetaminophen**	0.0080	U	ug/L	P333492	
		MCP	0.0020	U	ug/L	P333492	
		Carbamazepine**	0.0021		ug/L	P333492	
		Triclopyr**	0.0040	U	ug/L	P333492	
		Primidone**	0.0040	U	ug/L	P333492	
		Fluridone**	4.0E-04	U	ug/L	P333492	

Ref. Method and Comment:

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333570

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333716

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: P333716

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: P333661

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333663

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333892

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333893

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: P334270

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333995

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333814

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333505

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

Reference Method: EPA 8321B
Batch ID: P333553

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P333511

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P333513

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P333739

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
 Batch ID: P333869

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P333935

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P333742

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P333990

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

Reference Method: USGS O-2060-01
 Batch ID: P333492

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: P333716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	98.3		P	85 - 115
Sodium	100		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	99.8		P	85 - 115
Lead	98.3		P	85 - 115
Nickel	102		P	85 - 115
Silver	98.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333661

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333663

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333892

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333893

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334270

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333995

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333505

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

Reference Method: EPA 8321B
Batch ID: P333553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.3		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333739

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

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P333492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.9		P	40 - 150
Acetaminophen	102		P	30 - 150
Bentazon	24.4		F	30 - 150
Carbamazepine	66.4		P	40 - 150
Diuron	104		P	40 - 150
Fenuron	98.4		P	40 - 150
Fluridone	105		P	40 - 150
Imidacloprid	76.9		P	40 - 160
Linuron	113		P	40 - 150
MCPP	63.7		P	40 - 150
Primidone	91.1		P	40 - 150
Triclopyr	62.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937479	Calcium	105		P	80 - 120
1937479	Iron	106		P	80 - 120
1937479	Magnesium	106		P	80 - 120
1937479	Potassium	99.1		P	80 - 120
1937479	Sodium	101		P	80 - 120
1937479	Zinc	100		P	80 - 120
1937773	Calcium	101		P	80 - 120
1937773	Iron	107	105	P/P	80 - 120
1937773	Magnesium	101		P	80 - 120
1937773	Potassium	97.6		P	80 - 120
1937773	Sodium	101		P	80 - 120
1937773	Zinc	99.1	99.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937479	Arsenic	103		P	80 - 120
1937479	Cadmium	105		P	80 - 120
1937479	Chromium	102		P	80 - 120
1937479	Copper	102		P	80 - 120
1937479	Lead	100		P	80 - 120
1937479	Nickel	103		P	80 - 120
1937479	Silver	97.8		P	80 - 120
1937773	Arsenic	105	107	P/P	80 - 120
1937773	Cadmium	105	108	P/P	80 - 120
1937773	Chromium	101	103	P/P	80 - 120
1937773	Copper	101	103	P/P	80 - 120
1937773	Lead	101	102	P/P	80 - 120
1937773	Nickel	103	104	P/P	80 - 120
1937773	Silver	102	101	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936945	Chloride	103		P	90 - 110
1937081	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936945	Sulfate	101		P	90 - 110
1937081	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937127	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937209	Ammonia-N	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937209	Kjeldahl Nitrogen	91.5	88.4	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937110	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937178	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937128	Total-P	95.3	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937179	Total-P	95.1	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937112	O-Phosphate-P	91.5	93.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P333553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937062	Sucralose	47.0	48.8	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936807	Fluoride	98.8	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937083	Organic Carbon	96.1	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937158	2,4-D	61.0	65.5	P/P	40 - 150
1937158	Acetaminophen	100	99.6	P/P	30 - 150
1937158	Bentazon	15.0	18.2	F/F	30 - 150
1937158	Carbamazepine	124	127	P/P	40 - 150
1937158	Diuron	91.0	93.4	P/P	40 - 150
1937158	Fenuron	75.8	124	P/P	40 - 150
1937158	Fluridone	78.8	90.4	P/P	40 - 150
1937158	Imidacloprid	200	197	F/F	40 - 160
1937158	Linuron	97.1	99.5	P/P	40 - 150
1937158	MCP	45.6	43.3	P/P	40 - 150
1937158	Primidone	111	102	P/P	40 - 150
1937158	Triclopyr	41.1	44.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937125	Turbidity	9.02	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937773	Calcium	1.19	Spike	P	0 - 20
1937773	Iron	1.68	Spike	P	0 - 20
1937773	Magnesium	2.18	Spike	P	0 - 20
1937773	Potassium	0.535	Spike	P	0 - 20
1937773	Sodium	0.801	Spike	P	0 - 20
1937773	Zinc	0.101	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937773	Arsenic	1.15	Spike	P	0 - 20
1937773	Cadmium	3.11	Spike	P	0 - 20
1937773	Chromium	1.57	Spike	P	0 - 20
1937773	Copper	2.05	Spike	P	0 - 20
1937773	Lead	1.58	Spike	P	0 - 20
1937773	Nickel	0.777	Spike	P	0 - 20
1937773	Silver	0.800	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936945	Chloride	0.227	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936945	Sulfate	0.323	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937127	Ammonia-N	0.471	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937209	Ammonia-N	2.73	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937209	Kjeldahl Nitrogen	2.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937110	NO2NO3-N	0.388	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937178	NO2NO3-N	0.460	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937128	Total-P	2.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937179	Total-P	3.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937112	O-Phosphate-P	2.26	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P333553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937062	Sucralose	2.83	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P333511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937204	Color (true)	8.78	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P333513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937075	Color (true)	2.44	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P333739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Total Alkalinity	1.68	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P333869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937126	TDS	8.57	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P333742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Fluoride	0.472	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P333990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937083	Organic Carbon	0.382	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P333492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937158	2,4-D	7.18	Spike	P	0 - 30
1937158	Acetaminophen	0.461	Spike	P	0 - 30
1937158	Bentazon	10.2	Spike	P	0 - 30
1937158	Carbamazepine	1.95	Spike	P	0 - 30
1937158	Diuron	1.78	Spike	P	0 - 30
1937158	Fenuron	37.5	Spike	F	0 - 30
1937158	Fluridone	11.1	Spike	P	0 - 30
1937158	Imidacloprid	1.41	Spike	P	0 - 30
1937158	Linuron	2.38	Spike	P	0 - 30
1937158	MCP	4.99	Spike	P	0 - 30
1937158	Primidone	7.11	Spike	P	0 - 30
1937158	Triclopyr	8.34	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: 1937192

Field Sample ID: G3SD101617-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.4	P	30 - 160
EPA 8321B	Diuron-d6	61.2	P	30 - 160
EPA 8321B	Primidone-d5	75.0	P	30 - 160
EPA 8321B	Sucralose-d6	56.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	59.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	101	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	86.4	P	30 - 160
USGS O-2060-01	Diuron-d6	61.2	P	30 - 160
USGS O-2060-01	Primidone-d5	75.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	56.5	P	40 - 160

Lab Sample ID: 1937193

Field Sample ID: G3SD101617-7

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	93.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.6	P	30 - 160
EPA 8321B	Diuron-d6	68.1	P	30 - 160
EPA 8321B	Primidone-d5	82.5	P	30 - 160
EPA 8321B	Sucralose-d6	52.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	60.7	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	93.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	90.6	P	30 - 160
USGS O-2060-01	Diuron-d6	68.1	P	30 - 160
USGS O-2060-01	Primidone-d5	82.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	52.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79593

Included Lab Sample IDs: 1937168, 1937169, 1937174, 1937175, 1937176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	107	P/P	90 - 110
Sulfate	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79608

Included Lab Sample IDs: 1937172, 1937173, 1937180, 1937181, 1937182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.7	P/P	90 - 110
O-Phosphate-P	98.7	97.9	P/P	90 - 110
O-Phosphate-P	98.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A79613

Included Lab Sample IDs: 1937168, 1937169, 1937174, 1937175, 1937176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.3	99.3	P/P	85 - 115
Color (true)	99.3	98.9	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79632

Included Lab Sample IDs: 1937168, 1937169, 1937174, 1937175, 1937176

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

Reference Method: EPA 8321B

Run ID: A79673

Included Lab Sample IDs: 1937192, 1937193

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.2	88.1	P/P	60 - 150
Sucralose	95.2	90.2	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A79678

Included Lab Sample IDs: 1937168, 1937169, 1937174, 1937175, 1937176

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

Reference Method: SM 4500 F-C-97

Run ID: A79678

Included Lab Sample IDs: 1937168, 1937169, 1937174, 1937175, 1937176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79696

Included Lab Sample IDs: 1937170, 1937171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79706

Included Lab Sample IDs: 1937194, 1937195, 1937196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	106	106	P/P	90 - 110
Cadmium	103	105	P/P	90 - 110
Chromium	103	105	P/P	90 - 110
Copper	105	106	P/P	90 - 110
Lead	99.9	101	P/P	90 - 110
Nickel	105	106	P/P	90 - 110
Silver	98.6	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79707

Included Lab Sample IDs: 1937194, 1937195, 1937196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.8	98.9	P/P	90 - 110
Iron	100	97.0	P/P	90 - 110
Magnesium	100	97.4	P/P	90 - 110
Potassium	96.0	94.5	P/P	90 - 110
Sodium	98.3	98.1	P/P	90 - 110
Zinc	95.8	94.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79747

Included Lab Sample IDs: 1937170, 1937171, 1937177, 1937178, 1937179

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79759

Included Lab Sample IDs: 1937177, 1937178, 1937179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.9	99.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79779

Included Lab Sample IDs: 1937170, 1937171, 1937177, 1937178, 1937179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.8	P/P	90 - 110
Organic Carbon	96.3	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79780

Included Lab Sample IDs: 1937170, 1937171, 1937177, 1937178, 1937179

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

Reference Method: USGS O-2060-01

Run ID: A79847

Included Lab Sample IDs: 1937192, 1937193

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.1	94.7	P/P	50 - 150
Acetaminophen	106	106	P/P	60 - 150
Bentazon	92.9	92.1	P/P	50 - 150
Carbamazepine	109	109	P/P	60 - 150
Diuron	112	107	P/P	60 - 150
Fenuron	105	105	P/P	60 - 150
Fluridone	108	109	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79847

Included Lab Sample IDs: 1937192, 1937193

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	100	98.5	P/P	60 - 150
Linuron	117	105	P/P	60 - 150
MCP	102	91.2	P/P	50 - 150
Primidone	98.1	97.7	P/P	60 - 150
Triclopyr	99.6	101	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79961

Included Lab Sample IDs: 1937170, 1937171, 1937177, 1937178, 1937179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	98.5	P/P	90 - 110
Kjeldahl Nitrogen	98.5	96.3	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						9.02	
EPA 200.7 Rev. 4.4	Calcium	102	105	101				1.19
	Iron	106	106	107	105			1.68
	Magnesium	103	106	101				2.18
	Potassium	98.3	99.1	97.6				0.535
	Sodium	100	101	101				0.801
	Zinc	100	100	99.1	99.2			0.101
EPA 200.8 Rev. 5.4	Arsenic	103	103	105	107			1.15
	Cadmium	103	105	105	108			3.11
	Chromium	99.8	102	101	103			1.57
	Copper	99.8	102	101	103			2.05
	Lead	98.3	100	101	102			1.58
	Nickel	102	103	103	104			0.777
	Silver	98.7	97.8	102	101			0.800
EPA 300.0 Rev. 2.1	Chloride	101	103	102			0.227	
	Sulfate	101	101	101			0.323	
EPA 350.1 Rev. 2.0	Ammonia-N	104	103	102				0.471
	Ammonia-N	105	107	104				2.73
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	91.5	88.4				2.88
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102					0.388
	NO2NO3-N	104	101	102				0.460
EPA 365.1 Rev. 2.0	Total-P	97.2	95.3	97.7				2.15
	Total-P	97.6	95.1	100				3.48
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	91.5	93.8				2.26
EPA 8321B	Sucralose	92.3	47.0	48.8				2.83
SM 2120 B	Color (true)						8.78	
	Color (true)						2.44	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
SM 2320 B-97	Total Alkalinity	102				1.68
SM 2540 C-97	TDS					8.57
SM 4500 F-C-97	Fluoride	96.0	98.8	99.3		0.472
SM 5310 B-00	Organic Carbon	95.2	96.1	95.4		0.382
USGS O-2060-01	2,4-D	67.9	61.0	65.5		7.18
	Acetaminophen	102	100	99.6		0.461
	Bentazon	24.4	15.0	18.2		10.2
	Carbamazepine	66.4	124	127		1.95
	Diuron	104	91.0	93.4		1.78
	Fenuron	98.4	75.8	124		37.5
	Fluridone	105	78.8	90.4		11.1
	Imidacloprid	76.9	200	197		1.41
	Linuron	113	97.1	99.5		2.38
	MCPPP	63.7	45.6	43.3		4.99
	Primidone	91.1	111	102		7.11
	Triclopyr	62.0	41.1	44.7		8.34

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1937168, 1937169, 1937174, 1937175, 1937176
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1937194, 1937195, 1937196
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1937194, 1937195, 1937196
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1937168, 1937169, 1937174, 1937175, 1937176
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1937168, 1937169, 1937174, 1937175, 1937176
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1937170, 1937171, 1937177, 1937178, 1937179
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1937170, 1937171, 1937177, 1937178, 1937179
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1937170, 1937171, 1937177, 1937178, 1937179
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1937170, 1937171, 1937177, 1937178, 1937179
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1937172, 1937173, 1937180, 1937181, 1937182
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1937192, 1937193
SM 2120 B / E31780	True Color measured at 450 nm	1937168, 1937169, 1937174, 1937175, 1937176
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1937168, 1937169, 1937174, 1937175, 1937176
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1937168, 1937169, 1937174, 1937175, 1937176
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1937168, 1937169, 1937174, 1937175, 1937176
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1937168, 1937169, 1937174, 1937175, 1937176
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1937170, 1937171, 1937177, 1937178, 1937179
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1937192, 1937193
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1937192, 1937193

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	10/17/2017			10/17/2017 15:46	DeAsia Armster	1937168, 1937169, 1937174, 1937175, 1937176
EPA 200.7 Rev. 4.4	10/17/2017	10/19/2017	Elliott D. Healy	10/20/2017	Betina Topolski	1937194, 1937195, 1937196
EPA 200.8 Rev. 5.4	10/17/2017	10/19/2017	Elliott D. Healy	10/20/2017	Nadine Brooks	1937194, 1937195, 1937196
EPA 300.0 Rev. 2.1	10/17/2017			10/17/2017	Julia Storbeck	1937168, 1937169, 1937174, 1937175, 1937176
EPA 350.1 Rev. 2.0	10/17/2017			10/23/2017	Sofia Elnemr	1937170, 1937171, 1937177, 1937178, 1937179
EPA 351.2 Rev. 2.0	10/17/2017	10/30/2017	Adrian Shelby	10/31/2017	Joseph Suarez	1937170, 1937171, 1937177, 1937178, 1937179
EPA 353.2 Rev. 2.0	10/17/2017			10/24/2017	Beverly Y. Sanders	1937170, 1937171, 1937177, 1937178, 1937179
EPA 365.1 Rev. 2.0	10/17/2017	10/18/2017	Sima Feizi	10/20/2017	Lipi Saha	1937170, 1937171
	10/17/2017	10/23/2017	Sima Feizi	10/24/2017	Lipi Saha	1937177, 1937178, 1937179
EPA 365.1 Rev. 2.0 dissolved	10/17/2017			10/17/2017 14:14	Megan Treadwell	1937172
	10/17/2017			10/17/2017 14:21	Megan Treadwell	1937181, 1937182
	10/17/2017			10/17/2017 14:32	Megan Treadwell	1937173
	10/17/2017			10/17/2017 14:33	Megan Treadwell	1937180
EPA 8321B	10/17/2017	10/18/2017	Juyoung Kim	10/19/2017	Juyoung Kim	1937192, 1937193
SM 2120 B	10/17/2017			10/17/2017 15:12	Tanya Welborn	1937168
	10/17/2017			10/17/2017 15:14	Tanya Welborn	1937169
	10/17/2017			10/17/2017 15:15	Tanya Welborn	1937174, 1937175
	10/17/2017			10/17/2017 15:20	Tanya Welborn	1937176
SM 2320 B-97	10/17/2017			10/20/2017	Dale L. Simmons	1937168, 1937169, 1937174, 1937175, 1937176
SM 2540 C-97	10/17/2017			10/18/2017	Yijie Li	1937168, 1937169, 1937174, 1937175, 1937176
SM 2540 D-97	10/17/2017			10/18/2017	Yijie Li	1937168, 1937169, 1937174, 1937175, 1937176
SM 4500 F-C-97	10/17/2017			10/20/2017	Dale L. Simmons	1937168, 1937169, 1937174, 1937175, 1937176
SM 5310 B-00	10/17/2017			10/23/2017	Ping Hua	1937170, 1937171, 1937177, 1937178, 1937179
USGS O-2060-01	10/17/2017	10/19/2017	Hoor Shaik	10/24/2017	Julie Michelle Frank	1937192, 1937193