

Chemical Analysis Report

WQAP-2017-04-27-08

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

Event Description: **SMP 2017 Freshwater Kit A with B/T/M**
Request ID: **RQ-2017-04-17-34**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 24-MAY-2017 10:57

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: 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: Bethel Creek @ SE Waccamaw Ave

Collection Date/Time: 04/27/2017 12:00

Field ID: G1TLHR0062-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893773	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P324195	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P324870	
	SM 2120 B	Color (true)	720		PCU	P324145	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P325143	
	SM 2540 C-97	TDS	144		mg/L	P325073	
	SM 2540 D-97	TSS	3	I	mg/L	P324863	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P325147	
1893775	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P324262	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P324287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P324390	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P324348	
	SM 5310 B-00	Organic Carbon	51		mg C/L	P324283	
1893777	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P324187	
1893794	EPA 8321B	Sucralose**	0.010	U	ug/L	P324163	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P324171	
		Diuron	8.0E-04	U	ug/L	P324171	
		Fenuron	0.0068	I	ug/L	P324171	
		Imidacloprid	8.0E-04	U	ug/L	P324171	MS
		Bentazon	8.0E-04	U	ug/L	P324171	
		Linuron	0.0040	U	ug/L	P324171	
		Acetaminophen**	0.0080	U	ug/L	P324171	
		MCP	8.0E-04	U	ug/L	P324171	
		Carbamazepine**	4.0E-04	U	ug/L	P324171	
		Triclopyr**	0.0040	U	ug/L	P324171	
		Primidone**	0.0040	U	ug/L	P324171	
		Fluridone**	4.0E-04	U	ug/L	P324171	

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: Sugar Creek @ Suwannee River

Collection Date/Time: 04/27/2017 10:20

Field ID: G1TLHR0047-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893774	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P324195	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P324870	
	SM 2120 B	Color (true)	63	A	PCU	P324146	
	SM 2320 B-97	Total Alkalinity	57		mg CaCO3/L	P325143	
	SM 2540 C-97	TDS	101		mg/L	P325073	
	SM 2540 D-97	TSS	6	I	mg/L	P324863	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P325147	
1893776	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P324262	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P324287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P324390	
	EPA 365.1 Rev. 2.0	Total-P	0.94		mg P/L	P324348	

Field ID: G1TLHR0047-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1893776	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P324283	
1893778	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.81		mg P/L	P324187	
1893795	EPA 8321B	Sucralose**	0.035	I	ug/L	P324163	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P324171	
		Diuron	8.0E-04	U	ug/L	P324171	
		Fenuron	0.0053	I	ug/L	P324171	
		Imidacloprid	0.012		ug/L	P324171	MS
		Bentazon	8.8E-04	I	ug/L	P324171	
		Linuron	0.0040	U	ug/L	P324171	
		Acetaminophen**	0.0080	U	ug/L	P324171	
		MCP	8.0E-04	U	ug/L	P324171	
		Carbamazepine**	4.0E-04	U	ug/L	P324171	
		Triclopyr**	0.0040	U	ug/L	P324171	
		Primidone**	0.0040	U	ug/L	P324171	
		Fluridone**	4.0E-04	U	ug/L	P324171	

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 USGS O-2060-01: Results confirmed in re-extraction.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P324195

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324870

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324262

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324287

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324390

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324187

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

Reference Method: EPA 8321B
Batch ID: P324163

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P324145

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P324146

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325143

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

Reference Method: SM 2540 C-97
Batch ID: P325073

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324863

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
 Batch ID: P324283

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

Reference Method: USGS O-2060-01
 Batch ID: P324171

Component	Result	Code	Units
2,4-D	8.0E-04	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	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	8.0E-04	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 300.0 Rev. 2.1
 Batch ID: P324870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324262

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324348

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324187

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

Reference Method: EPA 8321B
 Batch ID: P324163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	73.6		P	40 - 140

Reference Method: SM 2320 B-97
 Batch ID: P325143

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

Reference Method: SM 4500 F-C-97
 Batch ID: P325147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P324283

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

Reference Method: USGS O-2060-01
 Batch ID: P324171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	69.0		P	40 - 140
Acetaminophen	43.4		P	40 - 140
Bentazon	47.0		P	40 - 140
Carbamazepine	114		P	40 - 140
Diuron	119		P	40 - 140
Fenuron	106		P	40 - 140
Fluridone	99.5		P	40 - 140
Imidacloprid	108		P	40 - 160
Linuron	106		P	40 - 140
MCP	74.2		P	40 - 140
Primidone	99.7		P	40 - 140
Triclopyr	74.9		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893679	Chloride	97.5		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893698	Chloride	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893775	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893705	Kjeldahl Nitrogen	95.3	94.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893776	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893704	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893708	O-Phosphate-P	95.8	95.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P324163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893377	Sucralose	109	114	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P325147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895213	Fluoride	98.7	99.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893581	Organic Carbon	103	103	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P324171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893801	2,4-D	64.9	67.1	P/P	40 - 140
1893801	Acetaminophen	87.4	91.4	P/P	40 - 140
1893801	Bentazon	52.8	56.6	P/P	40 - 140
1893801	Carbamazepine	103	107	P/P	40 - 140
1893801	Diuron	88.9	98.4	P/P	40 - 140
1893801	Fenuron	81.5	83.8	P/P	40 - 140
1893801	Fluridone	81.5	86.4	P/P	40 - 140
1893801	Imidacloprid	183	198	F/F	40 - 160
1893801	Linuron	97.5	95.9	P/P	40 - 140
1893801	MCP	57.6	61.7	P/P	40 - 140
1893801	Primidone	103	107	P/P	40 - 140
1893801	Triclopyr	58.8	63.5	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P324195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893713	Turbidity	4.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893679	Chloride	0.217	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893775	Ammonia-N	0.844	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893705	Kjeldahl Nitrogen	1.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893776	NO ₂ NO ₃ -N	0.348	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P324348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893704	Total-P	0.179	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893708	O-Phosphate-P	0.188	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P324163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893377	Sucralose	4.12	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P324145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893700	Color (true)	10.9	Sample	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P324146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893774	Color (true)	0.700	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P325143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895213	Total Alkalinity	0.271	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P325073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893785	TDS	0.816	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P325147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895213	Fluoride	0.483	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P324283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893581	Organic Carbon	0.214	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P324171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893801	2,4-D	3.17	Spike	P	0 - 30
1893801	Acetaminophen	4.09	Spike	P	0 - 30
1893801	Bentazon	6.47	Spike	P	0 - 30
1893801	Carbamazepine	3.95	Spike	P	0 - 30
1893801	Diuron	9.28	Spike	P	0 - 30
1893801	Fenuron	2.61	Spike	P	0 - 30
1893801	Fluridone	5.75	Spike	P	0 - 30
1893801	Imidacloprid	7.60	Spike	P	0 - 30
1893801	Linuron	1.56	Spike	P	0 - 30
1893801	MCPP	6.98	Spike	P	0 - 30
1893801	Primidone	4.20	Spike	P	0 - 30
1893801	Triclopyr	7.72	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: 1893794
Field Sample ID: G1TLHR0062-2017-01

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	83.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	63.4	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	118	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	89.1	P	30 - 160
USGS O-2060-01	Diuron-d6	79.7	P	30 - 150
USGS O-2060-01	Primidone-d5	85.0	P	30 - 150

Lab Sample ID: 1893795
Field Sample ID: G1TLHR0047-2017-01

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	85.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	44.9	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	66.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	68.9	P	30 - 160
USGS O-2060-01	Diuron-d6	63.4	P	30 - 150
USGS O-2060-01	Primidone-d5	78.0	P	30 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A76036

Included Lab Sample IDs: 1893773, 1893774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.3	98.5	P/P	85 - 115
Color (true)	98.5	99.5	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76048

Included Lab Sample IDs: 1893777, 1893778

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76055

Included Lab Sample IDs: 1893773, 1893774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76071

Included Lab Sample IDs: 1893775, 1893776

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

Reference Method: EPA 8321B

Run ID: A76074

Included Lab Sample IDs: 1893794, 1893795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.2	109	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A76081

Included Lab Sample IDs: 1893775, 1893776

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76117

Included Lab Sample IDs: 1893775, 1893776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76133

Included Lab Sample IDs: 1893775, 1893776

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76164

Included Lab Sample IDs: 1893776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.4	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76183

Included Lab Sample IDs: 1893775

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1893773, 1893774

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

Reference Method: SM 2320 B-97

Run ID: A76363

Included Lab Sample IDs: 1893773, 1893774

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

Reference Method: SM 4500 F-C-97

Run ID: A76363

Included Lab Sample IDs: 1893773, 1893774

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

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1893794, 1893795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.4	85.6	P/P	50 - 150
Acetaminophen	108	102	P/P	60 - 150
Bentazon	82.8	80.8	P/P	50 - 150
Carbamazepine	106	90.0	P/P	60 - 150
Diuron	114	96.4	P/P	60 - 150
Fenuron	104	93.6	P/P	60 - 150
Fluridone	116	97.2	P/P	60 - 150
Imidacloprid	110	97.2	P/P	60 - 150
Linuron	94.0	85.2	P/P	60 - 150
MCP	89.6	88.0	P/P	50 - 150
Primidone	99.6	88.4	P/P	60 - 150
Triclopyr	91.2	89.6	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				4.06	
EPA 300.0 Rev. 2.1	Chloride	99.4	97.5	98.0	0.217	
EPA 350.1 Rev. 2.0	Ammonia-N	102	105	104		0.844
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9	95.3	94.0		1.13
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	101			0.348
EPA 365.1 Rev. 2.0	Total-P	102	106	106		0.179
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	95.8	95.6		0.188
EPA 8321B	Sucralose	73.6	109	114		4.12
SM 2120 B	Color (true)				10.9	
	Color (true)				0.700	
SM 2320 B-97	Total Alkalinity	103			0.271	
SM 2540 C-97	TDS				0.816	
SM 4500 F-C-97	Fluoride	96.7	98.7	99.4		0.483
SM 5310 B-00	Organic Carbon	103	103	103		0.214
USGS O-2060-01	2,4-D	69.0	64.9	67.1		3.17
	Acetaminophen	43.4	87.4	91.4		4.09
	Bentazon	47.0	52.8	56.6		6.47
	Carbamazepine	114	103	107		3.95
	Diuron	119	88.9	98.4		9.28
	Fenuron	106	81.5	83.8		2.61
	Fluridone	99.5	81.5	86.4		5.75
	Imidacloprid	108	183	198		7.60
	Linuron	106	97.5	95.9		1.56
	MCP	74.2	57.6	61.7		6.98
	Primidone	99.7	103	107		4.20
	Triclopyr	74.9	58.8	63.5		7.72

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1893773, 1893774
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1893773, 1893774
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1893775, 1893776
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1893775, 1893776
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1893775, 1893776
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1893775, 1893776
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1893777, 1893778
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1893794, 1893795
SM 2120 B / E31780	True Color measured at 450 nm	1893773, 1893774
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1893773, 1893774
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1893773, 1893774
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1893773, 1893774
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1893773, 1893774
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1893775, 1893776
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1893794, 1893795
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1893794, 1893795

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	04/27/2017			04/27/2017 16:59	Sima Feizi	1893773, 1893774
EPA 300.0 Rev. 2.1	04/27/2017			05/08/2017	Ping Hua	1893773, 1893774
EPA 350.1 Rev. 2.0	04/27/2017			04/28/2017	Julie Michelle Frank	1893775, 1893776
EPA 351.2 Rev. 2.0	04/27/2017	05/01/2017	Adrian Shelby	05/02/2017	Joseph Suarez	1893775, 1893776
EPA 353.2 Rev. 2.0	04/27/2017			05/02/2017	Beverly Y. Sanders	1893775, 1893776
EPA 365.1 Rev. 2.0	04/27/2017	05/02/2017	Adrian Shelby	05/03/2017	Lipi Saha	1893776
	04/27/2017	05/02/2017	Adrian Shelby	05/04/2017	Lipi Saha	1893775
EPA 365.1 Rev. 2.0 dissolved	04/27/2017			04/27/2017 17:40	Anthony C. Onicha	1893777
	04/27/2017			04/27/2017 17:41	Anthony C. Onicha	1893778
EPA 8321B	04/27/2017	04/29/2017	Mohammad Ghaffari	04/30/2017	Mohammad Ghaffari	1893794, 1893795
SM 2120 B	04/27/2017			04/27/2017 16:52	Julia Storbeck	1893773
	04/27/2017			04/27/2017 16:58	Julia Storbeck	1893774
SM 2320 B-97	04/27/2017			05/10/2017	Dale L. Simmons	1893773, 1893774
SM 2540 C-97	04/27/2017			05/02/2017	Sima Feizi	1893773, 1893774
SM 2540 D-97	04/27/2017			05/02/2017	Sima Feizi	1893773, 1893774
SM 4500 F-C-97	04/27/2017			05/10/2017	Dale L. Simmons	1893773, 1893774
SM 5310 B-00	04/27/2017			04/29/2017	Julie Michelle Frank	1893775, 1893776
USGS O-2060-01	04/27/2017	05/03/2017	Hoor Shaik	05/15/2017	Juyoung Kim	1893794, 1893795