

Chemical Analysis Report

WQAP-2017-06-28-11

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

Event Description: **SMP 2017 kit A-b/t/m PCR-FILTER & PCR-HF183**
Request ID: **RQ-2017-06-26-37**
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: 20-JUL-2017 10:19

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: 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: BEAR CREEK SR 257

Collection Date/Time: 06/28/2017 12:55

Field ID: G1TLHR0052-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909903	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P328063	
	SM 2120 B	Color (true)	130		PCU	P327707	
	SM 2320 B-97	Total Alkalinity	1.1	I	mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	28		mg/L	P328015	
	SM 2540 D-97	TSS	6	I	mg/L	P328285	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P327983	
1909905	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P327892	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P328109	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P327943	
1909907	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P327741	
1909919	EPA 8321B	Sucralose**	0.010	U	ug/L	P327691	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327711	
		Diuron	8.0E-04	U	ug/L	P327711	
		Fenuron	0.0080	U	ug/L	P327711	
		Imidacloprid	8.0E-04	U	ug/L	P327711	
		Bentazon	8.0E-04	U	ug/L	P327711	
		Linuron	0.0040	U	ug/L	P327711	RPD
		Acetaminophen**	0.0080	U	ug/L	P327711	
		MCPD	0.0020	U	ug/L	P327711	
		Carbamazepine**	4.0E-04	U	ug/L	P327711	
		Triclopyr**	0.0040	U	ug/L	P327711	
		Primidone**	0.0040	U	ug/L	P327711	
		Fluridone**	4.0E-04	U	ug/L	P327711	

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: OCKLOWAHA CREEK SR 267

Collection Date/Time: 06/28/2017 13:20

Field ID: G1TLHR0053-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909904	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P328063	
	SM 2120 B	Color (true)	180		PCU	P327707	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	46		mg/L	P328015	
	SM 2540 D-97	TSS	3	IA	mg/L	P328285	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327983	
1909906	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P327892	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P328109	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.089		mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P327860	

Field ID: G1TLHR0053-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909906	SM 5310 B-00	Organic Carbon	14		mg C/L	P327943	
1909908	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327741	
1909920	EPA 8321B	Sucralose**	0.010	U	ug/L	P327691	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327711	
		Diuron	8.0E-04	U	ug/L	P327711	
		Fenuron	0.0080	U	ug/L	P327711	
		Imidacloprid	8.0E-04	U	ug/L	P327711	
		Bentazon	8.0E-04	U	ug/L	P327711	
		Linuron	0.0040	U	ug/L	P327711	RPD
		Acetaminophen**	0.0080	U	ug/L	P327711	
		MCPD	0.0020	U	ug/L	P327711	
		Carbamazepine**	4.0E-04	U	ug/L	P327711	
		Triclopyr**	0.0040	U	ug/L	P327711	
		Primidone**	0.0040	U	ug/L	P327711	
		Fluridone**	4.0E-04	U	ug/L	P327711	

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327680

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328063

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327892

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328109

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P327853

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: P327851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

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

Reference Method: EPA 8321B
Batch ID: P327691

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P327707

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P327909

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

Reference Method: SM 2540 C-97
Batch ID: P328015

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328285

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327983

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: P327943

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

Reference Method: USGS O-2060-01
Batch ID: P327711

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	0.0080	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 300.0 Rev. 2.1
Batch ID: P328063

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327892

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328109

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

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: P327851

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P327860

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P327741

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

Reference Method: EPA 8321B
 Batch ID: P327691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	112		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P327909

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

Reference Method: SM 4500 F-C-97
 Batch ID: P327983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P327943

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

Reference Method: USGS O-2060-01
 Batch ID: P327711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 150
Acetaminophen	101		P	30 - 150
Bentazon	82.7		P	40 - 150
Carbamazepine	107		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	110		P	40 - 150
Fluridone	92.4		P	40 - 150
Imidacloprid	110		P	40 - 160
Linuron	102		P	40 - 150
MCPP	84.6		P	40 - 150
Primidone	92.6		P	40 - 150
Triclopyr	82.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909826	Chloride	96.7		P	90 - 110
1909903	Chloride	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909884	Ammonia-N	98.1	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909905	Kjeldahl Nitrogen	97.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909828	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909832	Total-P	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909994	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909907	O-Phosphate-P	95.6	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P327691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909869	Sucralose	128	130	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909623	Fluoride	99.9	100	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P327943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909559	Organic Carbon	95.4	97.4	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P327711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909869	2,4-D	105	83.3	P/P	40 - 150
1909869	Acetaminophen	89.8	81.2	P/P	30 - 150
1909869	Bentazon	64.3	59.9	P/P	40 - 150
1909869	Carbamazepine	120	108	P/P	40 - 150
1909869	Diuron	99.3	82.8	P/P	40 - 150
1909869	Fenuron	106	89.2	P/P	40 - 150
1909869	Fluridone	88.7	76.8	P/P	40 - 150
1909869	Imidacloprid	134	109	P/P	40 - 160
1909869	Linuron	106	76.4	P/P	40 - 150
1909869	MCCP	93.9	80.6	P/P	40 - 150
1909869	Primidone	119	103	P/P	40 - 150
1909869	Triclopyr	87.8	73.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909883	Turbidity	0.385	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909826	Chloride	0.931	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909884	Ammonia-N	0.438	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909905	Kjeldahl Nitrogen	2.84	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909828	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909832	Total-P	0.0733	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909994	Total-P	2.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909907	O-Phosphate-P	1.72	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P327691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909869	Sucralose	1.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P327707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909825	Color (true)	0.107	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Total Alkalinity	0.893	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909653	TDS	5.89	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Fluoride	0.542	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909559	Organic Carbon	1.29	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P327711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909869	2,4-D	23.3	Spike	P	0 - 30
1909869	Acetaminophen	10.1	Spike	P	0 - 30
1909869	Bentazon	7.08	Spike	P	0 - 30
1909869	Carbamazepine	10.5	Spike	P	0 - 30
1909869	Diuron	18.1	Spike	P	0 - 30
1909869	Fenuron	17.3	Spike	P	0 - 30
1909869	Fluridone	14.3	Spike	P	0 - 30
1909869	Imidacloprid	20.4	Spike	P	0 - 30
1909869	Linuron	32.5	Spike	F	0 - 30
1909869	MCPP	15.3	Spike	P	0 - 30
1909869	Primidone	14.2	Spike	P	0 - 30
1909869	Triclopyr	17.2	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: 1909919
Field Sample ID: G1TLHR0052-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	119	P	40 - 160
USGS O-2060-01	2,4-D-d3	144	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	81.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	112	P	30 - 165
USGS O-2060-01	Diuron-d6	112	P	30 - 160
USGS O-2060-01	Primidone-d5	98.7	P	30 - 150

Lab Sample ID: 1909920
Field Sample ID: G1TLHR0053-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	118	P	40 - 160
USGS O-2060-01	2,4-D-d3	123	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1909920

Field Sample ID: G1TLHR0053-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Acetaminophen-d4	128	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	109	P	30 - 165
USGS O-2060-01	Diuron-d6	84.9	P	30 - 160
USGS O-2060-01	Primidone-d5	89.1	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77411

Included Lab Sample IDs: 1909903, 1909904

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

Reference Method: SM 2120 B

Run ID: A77420

Included Lab Sample IDs: 1909903, 1909904

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77426

Included Lab Sample IDs: 1909907, 1909908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.5	P/P	90 - 110
O-Phosphate-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77492

Included Lab Sample IDs: 1909905, 1909906

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77506

Included Lab Sample IDs: 1909905, 1909906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77508

Included Lab Sample IDs: 1909903, 1909904

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A77524

Included Lab Sample IDs: 1909905, 1909906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.5	94.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77532

Included Lab Sample IDs: 1909903, 1909904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77541

Included Lab Sample IDs: 1909905

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77558

Included Lab Sample IDs: 1909903, 1909904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.2	P/P	90 - 110
Chloride	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77565

Included Lab Sample IDs: 1909906

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77578

Included Lab Sample IDs: 1909905, 1909906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	94.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A77714

Included Lab Sample IDs: 1909919, 1909920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.7	77.3	P/P	50 - 150
Bentazon	85.8	71.6	P/P	50 - 150
MCP	82.7	91.1	P/P	50 - 150
Triclopyr	78.4	72.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1909919, 1909920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	81.0	87.6	P/P	60 - 150
Carbamazepine	89.8	88.6	P/P	60 - 150
Diuron	75.6	83.8	P/P	60 - 150
Fenuron	88.3	91.2	P/P	60 - 150
Fluridone	89.8	90.5	P/P	60 - 160
Imidacloprid	93.8	82.2	P/P	60 - 150
Linuron	92.6	79.4	P/P	60 - 150
Primidone	110	86.1	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1909919, 1909920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	114	P/P	60 - 160

* 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				0.385	
EPA 300.0 Rev. 2.1	Chloride	96.9	96.7 97.4		0.931	
EPA 350.1 Rev. 2.0	Ammonia-N	104	98.1 98.7			0.438
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	97.5 101			2.84
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104 104			0.482
EPA 365.1 Rev. 2.0	Total-P	101	99.0 99.0			0.0733
	Total-P	92.2	101 103			2.44
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	95.6 98.5			1.72
EPA 8321B	Sucralose	112	128 130			1.51
SM 2120 B	Color (true)				0.107	
SM 2320 B-97	Total Alkalinity	103			0.893	
SM 2540 C-97	TDS				5.89	
SM 4500 F-C-97	Fluoride	98.4	99.9 100			0.542
SM 5310 B-00	Organic Carbon	98.8	95.4 97.4			1.29
USGS O-2060-01	2,4-D	101	105 83.3			23.3
	Acetaminophen	101	89.8 81.2			10.1
	Bentazon	82.7	64.3 59.9			7.08
	Carbamazepine	107	120 108			10.5
	Diuron	103	99.3 82.8			18.1
	Fenuron	110	106 89.2			17.3
	Fluridone	92.4	88.7 76.8			14.3
	Imidacloprid	110	134 109			20.4
	Linuron	102	106 76.4			32.5
	MCP	84.6	93.9 80.6			15.3
	Primidone	92.6	119 103			14.2

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
USGS O-2060-01	Triclopyr	82.2	87.8 73.9			17.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1909903, 1909904
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1909903, 1909904
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1909905, 1909906
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1909905, 1909906
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1909905, 1909906
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1909905, 1909906
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1909907, 1909908
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1909919, 1909920
SM 2120 B / E31780	True Color measured at 450 nm	1909903, 1909904
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1909903, 1909904
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1909903, 1909904
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1909903, 1909904
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1909903, 1909904
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1909905, 1909906
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1909919, 1909920
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1909919, 1909920

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	06/28/2017			06/28/2017 17:52	DeAsia Armster	1909903, 1909904
EPA 300.0 Rev. 2.1	06/28/2017			07/07/2017	Julia Storbeck	1909903, 1909904
EPA 350.1 Rev. 2.0	06/28/2017			07/03/2017	Sofia Elnemr	1909905, 1909906
EPA 351.2 Rev. 2.0	06/28/2017	07/03/2017	Adrian Shelby	07/06/2017	Tanya Welborn	1909905, 1909906
EPA 353.2 Rev. 2.0	06/28/2017			07/03/2017	Beverly Y. Sanders	1909905, 1909906
EPA 365.1 Rev. 2.0	06/28/2017	07/03/2017	Vijayalakshmi Reddy	07/06/2017	Lipi Saha	1909905, 1909906
EPA 365.1 Rev. 2.0 dissolved	06/28/2017			06/29/2017 11:27	Ping Hua	1909907
	06/28/2017			06/29/2017 11:35	Ping Hua	1909908
EPA 8321B	06/28/2017	07/12/2017	Mohammad Ghaffari	07/13/2017	Mohammad Ghaffari	1909919, 1909920
SM 2120 B	06/28/2017			06/28/2017 18:42	Tanya Welborn	1909903
	06/28/2017			06/28/2017 18:43	Tanya Welborn	1909904
SM 2320 B-97	06/28/2017			07/01/2017	Dale L. Simmons	1909903, 1909904
SM 2540 C-97	06/28/2017			06/30/2017	Yijie Li	1909903, 1909904
SM 2540 D-97	06/28/2017			06/30/2017	Yijie Li	1909903, 1909904
SM 4500 F-C-97	06/28/2017			07/05/2017	Dale L. Simmons	1909903, 1909904
SM 5310 B-00	06/28/2017			07/03/2017	Sofia Elnemr	1909905, 1909906
USGS O-2060-01	06/28/2017	06/30/2017	Hoor Shaik	07/12/2017	Juyoung Kim	1909919, 1909920