

Chemical Analysis Report

WQAP-2017-07-12-01

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

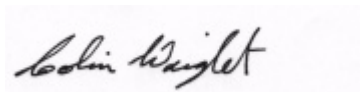
Event Description: **RUN 16**
Request ID: **RQ-2017-07-10-23**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
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Certified by: Colin Wright, Program Administrator

Date Certified: 01-AUG-2017 15:37

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light gray rectangular 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: Mattress Drain

Collection Date/Time: 07/11/2017 10:15

Field ID: G4SW0092

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912849	EPA 180.1 Rev. 2.0	Turbidity	55		NTU	P328388	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P328503	
		Sulfate	10		mg SO4/L	P328505	
	SM 2120 B	Color (true)	770		PCU	P328369	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P328815	
	SM 2540 C-97	TDS	240		mg/L	P328643	RPD
	SM 2540 D-97	TSS	15		mg/L	P328734	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P328817	
1912851	EPA 350.1 Rev. 2.0	Ammonia-N	5.1		mg N/L	P328589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	9.2		mg N/L	P328615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P328673	
	EPA 365.1 Rev. 2.0	Total-P	2.0		mg P/L	P328697	
	SM 5310 B-00	Organic Carbon	60		mg C/L	P328860	
1912853	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	1.5		mg P/L	P328385	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 07/21/2017.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Peace River

Collection Date/Time: 07/11/2017 11:40

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912850	EPA 180.1 Rev. 2.0	Turbidity	25		NTU	P328387	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P328503	
		Sulfate	44		mg SO4/L	P328505	
	SM 2120 B	Color (true)	100	A	PCU	P328369	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P328815	
	SM 2540 C-97	TDS	200		mg/L	P328643	RPD
	SM 2540 D-97	TSS	49		mg/L	P328734	
	SM 4500 F-C-97	Fluoride	0.67		mg F/L	P328817	
1912852	EPA 350.1 Rev. 2.0	Ammonia-N	0.54		mg N/L	P328589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P328615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P328673	
	EPA 365.1 Rev. 2.0	Total-P	0.89		mg P/L	P328697	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P328861	
1912854	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.40		mg P/L	P328501	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 07/21/2017.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Precision data and batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Peace River

Collection Date/Time: 07/11/2017 11:40

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912868	EPA 8321B	Sucralose**	4.5		ug/L	P328334	
	USGS O-2060-01	2,4-D	0.13		ug/L	P328373	
		Diuron	0.0013	I	ug/L	P328373	
		Fenuron	0.0080	U	ug/L	P328373	
		Imidacloprid	0.016		ug/L	P328373	MS
		Bentazon	0.0037		ug/L	P328373	
		Linuron	0.0040	U	ug/L	P328373	
		Acetaminophen**	0.0080	U	ug/L	P328373	
		MCP	0.0020	U	ug/L	P328373	
		Carbamazepine**	0.0089		ug/L	P328373	
		Triclopyr**	0.0040	U	ug/L	P328373	
		Primidone**	0.015	I	ug/L	P328373	
		Fluridone**	0.0014	I	ug/L	P328373	RPD

Ref. Method and Comment:

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

Sample Location: Peace River Dup

Collection Date/Time: 07/11/2017 11:42

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912869	EPA 8321B	Sucralose**	4.3		ug/L	P328402	
	USGS O-2060-01	2,4-D	0.14		ug/L	P328373	
		Diuron	0.0013	I	ug/L	P328373	
		Fenuron	0.0080	U	ug/L	P328373	
		Imidacloprid	0.014		ug/L	P328373	MS
		Bentazon	0.0045		ug/L	P328373	
		Linuron	0.0040	U	ug/L	P328373	
		Acetaminophen**	0.0080	U	ug/L	P328373	
		MCP	0.0020	U	ug/L	P328373	
		Carbamazepine**	0.0090		ug/L	P328373	
		Triclopyr**	0.0040	U	ug/L	P328373	
		Primidone**	0.018		ug/L	P328373	
		Fluridone**	0.0015	I	ug/L	P328373	RPD

Ref. Method and Comment:

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

Sample Location: BLANK

Collection Date/Time: 07/11/2017 13:30

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912870	EPA 8321B	Sucralose**	0.010	U	ug/L	P328402	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P328373	
		Diuron	8.0E-04	U	ug/L	P328373	
		Fenuron	0.0080	U	ug/L	P328373	
		Imidacloprid	8.0E-04	U	ug/L	P328373	MS
		Bentazon	8.0E-04	U	ug/L	P328373	
		Linuron	0.0040	U	ug/L	P328373	

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912870	USGS O-2060-01	Acetaminophen**	0.0080	U	ug/L	P328373	
		MCPP	0.0020	U	ug/L	P328373	
		Carbamazepine**	4.0E-04	U	ug/L	P328373	
		Triclopyr**	0.0040	U	ug/L	P328373	
		Primidone**	0.0040	U	ug/L	P328373	
		Fluridone**	4.0E-04	U	ug/L	P328373	RPD

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328387

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328388

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328503

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328505

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328589

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328615

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P328673

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: P328697

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328385

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328501

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

Reference Method: EPA 8321B
Batch ID: P328334

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P328402

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P328369

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328815

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

Reference Method: SM 2540 C-97
Batch ID: P328643

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328734

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P328817

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P328860

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

Reference Method: SM 5310 B-00
Batch ID: P328861

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

Reference Method: USGS O-2060-01
Batch ID: P328373

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 300.0 Rev. 2.1
Batch ID: P328503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328589

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328615

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328673

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328385

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328501

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

Reference Method: EPA 8321B
Batch ID: P328334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	81.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P328402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P328815

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

Reference Method: SM 4500 F-C-97
Batch ID: P328817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P328860

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

Reference Method: SM 5310 B-00
Batch ID: P328861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P328373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.2		P	40 - 150
Acetaminophen	134		P	30 - 150
Bentazon	94.8		P	40 - 150
Carbamazepine	118		P	40 - 150
Diuron	105		P	40 - 150
Fenuron	97.2		P	40 - 150
Fluridone	102		P	40 - 150
Imidacloprid	72.5		P	40 - 160
Linuron	109		P	40 - 150
MCP	95.4		P	40 - 150
Primidone	102		P	40 - 150
Triclopyr	83.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912707	Chloride	100		P	90 - 110
1912715	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912707	Sulfate	97.0		P	90 - 110
1912715	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912767	Ammonia-N	105	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912799	Kjeldahl Nitrogen	98.3	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912746	NO2NO3-N	99.9	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912800	Total-P	97.5	96.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912610	Sucralose	81.9	94.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P328402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912913	Sucralose	118	114	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P328817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914004	Fluoride	96.9	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P328861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912852	Organic Carbon	99.0		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P328373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912651	2,4-D	101	114	P/P	40 - 150
1912651	Acetaminophen	113	106	P/P	30 - 150
1912651	Bentazon	85.2	84.1	P/P	40 - 150
1912651	Carbamazepine	137	130	P/P	40 - 150
1912651	Fenuron	87.8	87.0	P/P	40 - 150
1912651	Fluridone	55.9	83.1	P/P	40 - 150
1912651	Imidacloprid	157	172	P/F	40 - 160
1912651	Linuron	95.9	111	P/P	40 - 150
1912651	MCP	104	103	P/P	40 - 150
1912651	Primidone	106	94.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P328373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912651	Triclopyr	101	91.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912760	Turbidity	3.37	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912896	Turbidity	1.89	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912707	Chloride	2.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912707	Sulfate	3.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912767	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912799	Kjeldahl Nitrogen	0.380	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912746	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912800	Total-P	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912717	O-Phosphate-P	0.325	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912610	Sucralose	13.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P328402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912913	Sucralose	3.37	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P328369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912850	Color (true)	3.38	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P328815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914004	Total Alkalinity	0.118	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912890	TDS	10.2	Sample	F	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P328817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914004	Fluoride	1.04	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P328860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912638	Organic Carbon	0.416	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P328861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912852	Organic Carbon	0.315	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P328373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912651	2,4-D	6.78	Spike	P	0 - 30
1912651	Acetaminophen	5.91	Spike	P	0 - 30
1912651	Bentazon	1.30	Spike	P	0 - 30
1912651	Carbamazepine	5.59	Spike	P	0 - 30
1912651	Diuron	6.58	Spike	P	0 - 30
1912651	Fenuron	0.824	Spike	P	0 - 30
1912651	Fluridone	39.1	Spike	F	0 - 30
1912651	Imidacloprid	9.24	Spike	P	0 - 30
1912651	Linuron	14.3	Spike	P	0 - 30
1912651	MCPP	1.64	Spike	P	0 - 30
1912651	Primidone	11.9	Spike	P	0 - 30
1912651	Triclopyr	9.39	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: 1912868
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	95.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	135	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	85.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	85.3	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	102	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	102	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1912868
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Diuron-d6	62.2	P	30 - 160
USGS O-2060-01	Diuron-d6	62.2	P	30 - 160
USGS O-2060-01	Primidone-d5	76.8	P	30 - 160
USGS O-2060-01	Primidone-d5	76.8	P	30 - 160

Lab Sample ID: 1912869
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	101	P	40 - 160
USGS O-2060-01	2,4-D-d3	146	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	107	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	107	P	30 - 160
USGS O-2060-01	Diuron-d6	74.8	P	30 - 160
USGS O-2060-01	Diuron-d6	74.8	P	30 - 160
USGS O-2060-01	Primidone-d5	82.3	P	30 - 160
USGS O-2060-01	Primidone-d5	82.3	P	30 - 160

Lab Sample ID: 1912870
Field Sample ID: BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	110	P	40 - 160
USGS O-2060-01	2,4-D-d3	123	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	90.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	90.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	153	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	153	P	30 - 160
USGS O-2060-01	Diuron-d6	140	P	30 - 160
USGS O-2060-01	Diuron-d6	140	P	30 - 160
USGS O-2060-01	Primidone-d5	97.1	P	30 - 160
USGS O-2060-01	Primidone-d5	97.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A77661
Included Lab Sample IDs: 1912849, 1912850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	106	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77662
Included Lab Sample IDs: 1912854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77667

Included Lab Sample IDs: 1912853

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77668

Included Lab Sample IDs: 1912849, 1912850

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77695

Included Lab Sample IDs: 1912849, 1912850

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77748

Included Lab Sample IDs: 1912851, 1912852

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

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1912868, 1912869, 1912870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	140	P/P	60 - 160
Sucralose	140	122	P/P	60 - 160
Sucralose	99.1	114	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77778

Included Lab Sample IDs: 1912851, 1912852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77801

Included Lab Sample IDs: 1912851, 1912852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	95.4	P/P	90 - 110
Kjeldahl Nitrogen	96.9	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77814

Included Lab Sample IDs: 1912851, 1912852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.3	P/P	90 - 110
Total-P	98.6	97.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77832

Included Lab Sample IDs: 1912849, 1912850

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

Reference Method: SM 4500 F-C-97

Run ID: A77832

Included Lab Sample IDs: 1912849, 1912850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77848

Included Lab Sample IDs: 1912851, 1912852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.4	P/P	90 - 110
Organic Carbon	98.9	97.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A77880

Included Lab Sample IDs: 1912868, 1912869, 1912870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	83.0	P/P	50 - 150
2,4-D	83.0	83.5	P/P	50 - 150
Acetaminophen	103	115	P/P	60 - 150
Acetaminophen	115	102	P/P	60 - 150
Bentazon	77.6	79.6	P/P	50 - 150
Bentazon	82.5	77.6	P/P	50 - 150
Carbamazepine	112	103	P/P	60 - 150
Carbamazepine	97.2	112	P/P	60 - 150
Diuron	102	101	P/P	60 - 150
Diuron	102	102	P/P	60 - 150
Fenuron	104	99.5	P/P	60 - 150
Fenuron	99.5	97.4	P/P	60 - 150
Fluridone	110	106	P/P	60 - 160
Fluridone	113	110	P/P	60 - 160
Imidacloprid	88.2	94.0	P/P	60 - 150
Imidacloprid	92.8	88.2	P/P	60 - 150
Linuron	104	110	P/P	60 - 150
Linuron	110	103	P/P	60 - 150
MCPP	105	90.6	P/P	50 - 150
MCPP	90.6	97.4	P/P	50 - 150
Primidone	112	117	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77880

Included Lab Sample IDs: 1912868, 1912869, 1912870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	117	97.4	P/P	60 - 150
Triclopyr	114	95.5	P/P	50 - 150
Triclopyr	95.5	98.8	P/P	50 - 150

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.37	
	Turbidity				1.89	
EPA 300.0 Rev. 2.1	Chloride	96.5	100 100		2.53	
	Sulfate	95.3	97.0 98.5		3.25	
EPA 350.1 Rev. 2.0	Ammonia-N	102	105 102			1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	98.3 98.8			0.380
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.9 99.9			0.0
EPA 365.1 Rev. 2.0	Total-P	94.6	97.5 96.3			1.07
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0				0.325
	O-Phosphate-P	103				
EPA 8321B	Sucralose	81.4	81.9 94.2			13.9
	Sucralose	89.0	118 114			3.37
SM 2120 B	Color (true)				3.38	
SM 2320 B-97	Total Alkalinity	102			0.118	
SM 2540 C-97	TDS				10.2	
SM 4500 F-C-97	Fluoride	95.9	96.9 98.2			1.04
SM 5310 B-00	Organic Carbon	95.4				0.416
	Organic Carbon	96.0	99.0			0.315
USGS O-2060-01	2,4-D	97.2	101 114			6.78
	Acetaminophen	134	113 106			5.91
	Bentazon	94.8	85.2 84.1			1.30
	Carbamazepine	118	137 130			5.59
	Diuron	105				6.58
	Fenuron	97.2	87.8 87.0			0.824
	Fluridone	102	55.9 83.1			39.1
	Imidacloprid	72.5	157 172			9.24
	Linuron	109	95.9 111			14.3
	MCP	95.4	104 103			1.64
	Primidone	102	106 94.0			11.9
	Triclopyr	83.5	101 91.5			9.39

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1912849, 1912850

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1912849, 1912850
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1912849, 1912850
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1912851, 1912852
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1912851, 1912852
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1912851, 1912852
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1912851, 1912852
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1912853, 1912854
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1912868, 1912869, 1912870
SM 2120 B / E31780	True Color measured at 450 nm	1912849, 1912850
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1912849, 1912850
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1912849, 1912850
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1912849, 1912850
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1912849, 1912850
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1912851, 1912852
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1912868, 1912869, 1912870
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1912868, 1912869, 1912870

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/12/2017			07/12/2017 17:13	DeAsia Armster	1912849, 1912850
EPA 300.0 Rev. 2.1	07/12/2017			07/13/2017	Julia Storbeck	1912849, 1912850
EPA 350.1 Rev. 2.0	07/12/2017			07/14/2017	Sofia Elnemr	1912851, 1912852
EPA 351.2 Rev. 2.0	07/12/2017	07/18/2017	Adrian Shelby	07/19/2017	Joseph Suarez	1912851, 1912852
EPA 353.2 Rev. 2.0	07/12/2017			07/18/2017	Beverly Y. Sanders	1912851, 1912852
EPA 365.1 Rev. 2.0	07/12/2017	07/18/2017	Vijayalakshmi Reddy	07/19/2017	Lipi Saha	1912851, 1912852
EPA 365.1 Rev. 2.0 dissolved	07/12/2017			07/12/2017 15:30	Lipi Saha	1912854
	07/12/2017			07/12/2017 17:28	Lipi Saha	1912853
EPA 8321B	07/12/2017	07/13/2017	Mohammad Ghaffari	07/14/2017	Mohammad Ghaffari	1912868
	07/12/2017	07/14/2017	Mohammad Ghaffari	07/14/2017	Mohammad Ghaffari	1912869, 1912870
SM 2120 B	07/12/2017			07/12/2017 15:36	Tanya Welborn	1912849
	07/12/2017			07/12/2017 15:37	Tanya Welborn	1912850
SM 2320 B-97	07/12/2017			07/20/2017	Dale L. Simmons	1912849, 1912850
SM 2540 C-97	07/12/2017			07/13/2017	Yijie Li	1912849, 1912850
SM 2540 D-97	07/12/2017			07/13/2017	Yijie Li	1912849, 1912850
SM 4500 F-C-97	07/12/2017			07/20/2017	Dale L. Simmons	1912849, 1912850
SM 5310 B-00	07/12/2017			07/20/2017	Sofia Elnemr	1912851, 1912852
USGS O-2060-01	07/12/2017	07/13/2017	Hoor Shaik	07/20/2017	Juyoung Kim	1912868, 1912869, 1912870