

Chemical Analysis Report

WQAP-2017-07-11-03

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

Event Description: **RUN 11**
Request ID: **RQ-2017-07-10-21**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 01-AUG-2017 11:07



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: BISHOP TIDAL

Collection Date/Time: 07/10/2017 10:45

Field ID: G5SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912547	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P328429	
	SM 2320 B-97	Total Alkalinity	110		mg CaCO3/L	P328433	
	SM 2540 D-97	TSS	4	I	mg/L	P328736	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P328436	
1912550	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P328587	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P328615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P328456	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P328695	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P328860	
1912553	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P328308	

Ref. Method and Comment:

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

Sample Location: BISHOP TIDAL

Collection Date/Time: 07/10/2017 10:45

Field ID: G5SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912573	EPA 8321B	Sucralose**	7.2		ug/L	P328334	
	USGS O-2060-01	2,4-D	0.017		ug/L	P328267	
		Diuron	0.0054		ug/L	P328267	
		Fenuron	0.0080	U	ug/L	P328267	
		Imidacloprid	0.095		ug/L	P328267	
		Bentazon	0.033		ug/L	P328267	
		Linuron	0.0040	U	ug/L	P328267	
		Acetaminophen**	0.0080	U	ug/L	P328267	
		MCP	0.0045	I	ug/L	P328267	
		Carbamazepine**	0.014		ug/L	P328267	
		Triclopyr**	0.0040	U	ug/L	P328267	
		Primidone**	0.017		ug/L	P328267	
		Fluridone**	0.15		ug/L	P328267	

Ref. Method and Comment:

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

Sample Location: CEDAR TIDAL

Collection Date/Time: 07/10/2017 11:25

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912548	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P328429	
	SM 2320 B-97	Total Alkalinity	98	A	mg CaCO3/L	P328434	
	SM 2540 D-97	TSS	5	I	mg/L	P328738	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P328819	
1912551	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P328585	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P328614	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P328577	

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912551	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P328633	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P328977	
1912554	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P328308	

Sample Location: CEDAR TIDAL

Collection Date/Time: 07/10/2017 11:25

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912574	EPA 8321B	Sucralose**	1.2		ug/L	P328334	
	USGS O-2060-01	2,4-D	0.12		ug/L	P328267	
		Diuron	0.0033		ug/L	P328267	
		Fenuron	0.0080	U	ug/L	P328267	
		Imidacloprid	0.056		ug/L	P328267	
		Bentazon	0.044		ug/L	P328267	
		Linuron	0.0040	U	ug/L	P328267	
		Acetaminophen**	0.0086	I	ug/L	P328267	
		MCPP	0.010		ug/L	P328267	
		Carbamazepine**	8.2E-04	I	ug/L	P328267	
		Triclopyr**	0.0040	U	ug/L	P328267	
		Primidone**	0.0065	I	ug/L	P328267	
		Fluridone**	0.053		ug/L	P328267	

Ref. Method and Comment:

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

Sample Location: KLOSTERMAN

Collection Date/Time: 07/10/2017 13:05

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912549	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P328429	
	SM 2320 B-97	Total Alkalinity	129		mg CaCO3/L	P328434	
	SM 2540 D-97	TSS	18	A	mg/L	P328738	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P328668	
1912552	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P328585	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P328614	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328577	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P328633	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P328977	
1912555	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P328308	

Sample Location: KLOSTERMAN

Collection Date/Time: 07/10/2017 13:05

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912575	EPA 8321B	Sucralose**	0.94		ug/L	P328334	
	USGS O-2060-01	2,4-D	0.0026	I	ug/L	P328267	

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1912575	USGS O-2060-01	Diuron	8.4E-04	I	ug/L	P328267	
		Fenuron	0.0080	U	ug/L	P328267	
		Imidacloprid	0.0027	I	ug/L	P328267	
		Bentazon	0.072		ug/L	P328267	
		Linuron	0.0040	U	ug/L	P328267	
		Acetaminophen**	0.0080	U	ug/L	P328267	
		MCP	0.0020	U	ug/L	P328267	
		Carbamazepine**	0.0034		ug/L	P328267	
		Triclopyr**	0.0040	U	ug/L	P328267	
		Primidone**	0.0040	U	ug/L	P328267	
		Fluridone**	0.0018		ug/L	P328267	

Ref. Method and Comment:
 USGS O-2060-01: MS accuracy for carbamazepine and imidacloprid 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: P328429

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328585

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328587

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328614

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	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: P328456

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328577

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328633

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328308

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: SM 2320 B-97
Batch ID: P328433

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

Reference Method: SM 2320 B-97
Batch ID: P328434

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

Reference Method: SM 2540 D-97
Batch ID: P328736

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328738

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P328436

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P328668

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P328819

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: P328977

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

Reference Method: USGS O-2060-01
 Batch ID: P328267

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 350.1 Rev. 2.0
 Batch ID: P328585

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

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: P328614

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

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: P328456

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: P328577

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: P328633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
 Batch ID: P328433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
 Batch ID: P328434

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

Reference Method: SM 4500 F-C-97
 Batch ID: P328436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 4500 F-C-97
 Batch ID: P328668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 4500 F-C-97
 Batch ID: P328819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

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: P328977

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P328267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	40 - 150
Acetaminophen	126		P	30 - 150
Bentazon	94.3		P	40 - 150
Carbamazepine	125		P	40 - 150
Diuron	128		P	40 - 150
Fenuron	128		P	40 - 150
Fluridone	127		P	40 - 150
Imidacloprid	118		P	40 - 160
Linuron	129		P	40 - 150
MCP	109		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P328267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	117		P	40 - 150
Triclopyr	115		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912273	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912640	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912551	Kjeldahl Nitrogen	100	101	P/P	90 - 110

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: P328456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912480	NO2NO3-N	99.2	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912189	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912273	Total-P	94.8	96.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912683	Total-P	94.2	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P328308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912555	O-Phosphate-P	96.6	100	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: SM 4500 F-C-97
 Batch ID: P328436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912388	Fluoride	100	98.3	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P328668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913224	Fluoride	99.9	98.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P328819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912682	Fluoride	104	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P328977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912551	Organic Carbon	97.0	99.3	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P328267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1911688	2,4-D	125	110	P/P	40 - 150
1911688	Acetaminophen	114	96.4	P/P	30 - 150
1911688	Bentazon	71.5	86.8	P/P	40 - 150
1911688	Diuron	92.5	97.0	P/P	40 - 150
1911688	Fenuron	99.9	88.6	P/P	40 - 150
1911688	Fluridone	78.1	75.8	P/P	40 - 150
1911688	Linuron	127	127	P/P	40 - 150
1911688	MCP	133	120	P/P	40 - 150
1911688	Primidone	129	118	P/P	40 - 150
1911688	Triclopyr	115	107	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912387	Turbidity	1.71	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912273	Ammonia-N	0.366	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912640	Ammonia-N	0.488	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912551	Kjeldahl Nitrogen	0.887	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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912480	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912189	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912273	Total-P	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912683	Total-P	0.958	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912555	O-Phosphate-P	3.32	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: SM 2320 B-97
Batch ID: P328433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912388	Total Alkalinity	0.0835	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P328434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912548	Total Alkalinity	0.153	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P328736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912039	TSS	6.56	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P328738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912549	TSS	9.09	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P328436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912388	Fluoride	1.42	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P328668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913224	Fluoride	0.933	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P328819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912682	Fluoride	2.98	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: P328977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912551	Organic Carbon	1.94	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P328267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1911688	2,4-D	11.4	Spike	P	0 - 30
1911688	Acetaminophen	17.0	Spike	P	0 - 30
1911688	Bentazon	16.1	Spike	P	0 - 30
1911688	Carbamazepine	8.58	Spike	P	0 - 30
1911688	Diuron	4.14	Spike	P	0 - 30
1911688	Fenuron	12.0	Spike	P	0 - 30
1911688	Fluridone	2.82	Spike	P	0 - 30
1911688	Imidacloprid	8.36	Spike	P	0 - 30
1911688	Linuron	0.567	Spike	P	0 - 30
1911688	MCPP	10.2	Spike	P	0 - 30
1911688	Primidone	4.59	Spike	P	0 - 30
1911688	Triclopyr	7.43	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

Quality Assurance Report Surrogates

Lab Sample ID: 1912573
Field Sample ID: G5SW0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	94.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	128	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	73.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	73.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	105	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	105	P	30 - 160
USGS O-2060-01	Diuron-d6	79.7	P	30 - 160
USGS O-2060-01	Diuron-d6	79.7	P	30 - 160
USGS O-2060-01	Primidone-d5	92.3	P	30 - 160
USGS O-2060-01	Primidone-d5	92.3	P	30 - 160

Lab Sample ID: 1912574
Field Sample ID: G5SW0128

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	106	P	40 - 160
USGS O-2060-01	2,4-D-d3	122	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	93.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	93.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	103	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	103	P	30 - 160
USGS O-2060-01	Diuron-d6	59.9	P	30 - 160
USGS O-2060-01	Diuron-d6	59.9	P	30 - 160
USGS O-2060-01	Primidone-d5	75.7	P	30 - 160
USGS O-2060-01	Primidone-d5	75.7	P	30 - 160

Lab Sample ID: 1912575
Field Sample ID: G5SW0035

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	85.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	129	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	74.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	74.1	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	117	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	117	P	30 - 160
USGS O-2060-01	Diuron-d6	84.4	P	30 - 160
USGS O-2060-01	Diuron-d6	84.4	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: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77649
Included Lab Sample IDs: 1912553, 1912554, 1912555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	99.0	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A77688

Included Lab Sample IDs: 1912547, 1912548, 1912549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77688

Included Lab Sample IDs: 1912547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77690

Included Lab Sample IDs: 1912547, 1912548, 1912549

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77691

Included Lab Sample IDs: 1912550

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77744

Included Lab Sample IDs: 1912551, 1912552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77748

Included Lab Sample IDs: 1912550, 1912551, 1912552

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

Reference Method: SM 4500 F-C-97

Run ID: A77776

Included Lab Sample IDs: 1912549

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

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1912573, 1912574, 1912575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1912573, 1912574, 1912575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	134	114	P/P	60 - 160
Sucralose	98.0	97.3	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77801

Included Lab Sample IDs: 1912550, 1912551, 1912552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	98.8	P/P	90 - 110
Kjeldahl Nitrogen	98.8	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77814

Included Lab Sample IDs: 1912550, 1912551, 1912552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	98.5	P/P	90 - 110
Total-P	98.5	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77832

Included Lab Sample IDs: 1912548

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

Reference Method: SM 5310 B-00

Run ID: A77848

Included Lab Sample IDs: 1912550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.9	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A77880

Included Lab Sample IDs: 1912573, 1912574, 1912575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.2	108	P/P	50 - 150
Acetaminophen	97.2	90.1	P/P	60 - 150
Bentazon	100	80.6	P/P	50 - 150
Carbamazepine	82.9	104	P/P	60 - 150
Diuron	81.9	96.0	P/P	60 - 150
Fenuron	84.7	91.3	P/P	60 - 150
Fluridone	103	78.0	P/P	60 - 160
Imidacloprid	72.4	85.1	P/P	60 - 150
Linuron	95.4	89.4	P/P	60 - 150
MCPP	85.8	91.5	P/P	50 - 150
Primidone	69.6	96.1	P/P	60 - 150
Triclopyr	84.7	79.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A77885

Included Lab Sample IDs: 1912551, 1912552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	94.6	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				1.71	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	101 101			0.366
	Ammonia-N	105	104 103			0.488
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.8	100 101			0.887
	Kjeldahl Nitrogen	104	98.3 98.8			0.380
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.2 98.8			0.426
	NO2NO3-N	104	104 105			0.957
EPA 365.1 Rev. 2.0	Total-P	92.5	94.8 96.7			1.98
	Total-P	96.7	94.2 95.1			0.958
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.6 100			3.32
EPA 8321B	Sucralose	81.4	81.9 94.2			13.9
SM 2320 B-97	Total Alkalinity	104			0.0835	
	Total Alkalinity	103			0.153	
SM 2540 D-97	TSS				6.56	
	TSS				9.09	
SM 4500 F-C-97	Fluoride	98.9	100 98.3			1.42
	Fluoride	101	99.9 98.6			0.933
	Fluoride	98.9	104 99.1			2.98
SM 5310 B-00	Organic Carbon	95.4				0.416
	Organic Carbon	97.8	97.0 99.3			1.94
USGS O-2060-01	2,4-D	114	125 110			11.4
	Acetaminophen	126	114 96.4			17.0
	Bentazon	94.3	71.5 86.8			16.1
	Carbamazepine	125				8.58
	Diuron	128	92.5 97.0			4.14
	Fenuron	128	99.9 88.6			12.0
	Fluridone	127	78.1 75.8			2.82
	Imidacloprid	118				8.36
	Linuron	129	127 127			0.567
	MCP	109	133 120			10.2
	Primidone	117	129 118			4.59
	Triclopyr	115	115 107			7.43

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1912547, 1912548, 1912549

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1912550, 1912551, 1912552
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1912550, 1912551, 1912552
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1912550, 1912551, 1912552
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1912550, 1912551, 1912552
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1912553, 1912554, 1912555
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1912573, 1912574, 1912575
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1912547, 1912548, 1912549
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1912547, 1912548, 1912549
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1912547, 1912548, 1912549
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1912550, 1912551, 1912552
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1912573, 1912574, 1912575
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1912573, 1912574, 1912575

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	07/11/2017			07/11/2017 18:06	DeAsia Armster	1912547, 1912548, 1912549
EPA 350.1 Rev. 2.0	07/11/2017			07/14/2017	Sofia Elnemr	1912550, 1912551, 1912552
EPA 351.2 Rev. 2.0	07/11/2017	07/18/2017	Adrian Shelby	07/19/2017	Joseph Suarez	1912550, 1912551, 1912552
EPA 353.2 Rev. 2.0	07/11/2017			07/13/2017	Beverly Y. Sanders	1912550
	07/11/2017			07/17/2017	Beverly Y. Sanders	1912551, 1912552
EPA 365.1 Rev. 2.0	07/11/2017	07/18/2017	Vijayalakshmi Reddy	07/19/2017	Lipi Saha	1912550, 1912551, 1912552
EPA 365.1 Rev. 2.0 dissolved	07/11/2017			07/11/2017 15:48	Anthony C. Onicha	1912555
	07/11/2017			07/11/2017 16:36	Anthony C. Onicha	1912553
	07/11/2017			07/11/2017 16:37	Anthony C. Onicha	1912554
EPA 8321B	07/11/2017	07/13/2017	Mohammad Ghaffari	07/14/2017	Mohammad Ghaffari	1912573, 1912574, 1912575
SM 2320 B-97	07/11/2017			07/13/2017	Dale L. Simmons	1912547, 1912548, 1912549
SM 2540 D-97	07/11/2017			07/13/2017	Yijie Li	1912547, 1912548, 1912549
SM 4500 F-C-97	07/11/2017			07/13/2017	Dale L. Simmons	1912547
	07/11/2017			07/15/2017	Dale L. Simmons	1912549
	07/11/2017			07/20/2017	Dale L. Simmons	1912548
SM 5310 B-00	07/11/2017			07/19/2017	Sofia Elnemr	1912550
	07/11/2017			07/22/2017	Ping Hua	1912551, 1912552
USGS O-2060-01	07/11/2017	07/12/2017	Hoor Shaik	07/20/2017	Juyoung Kim	1912573, 1912574, 1912575