

Chemical Analysis Report

WQAP-2017-08-16-03

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-2017-08-14-26**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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Certified by: Colin Wright, Program Administrator

Date Certified: 07-SEP-2017 11:04

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored 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: Bishop Tidal

Collection Date/Time: 08/15/2017 10:55

Field ID: G1SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921745	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P330338	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P330607	
	SM 2540 D-97	TSS	8	I	mg/L	P330924	
	SM 4500 F-C-97	Fluoride	0.66		mg F/L	P330610	
1921748	EPA 350.1 Rev. 2.0	Ammonia-N	0.065		mg N/L	P330516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P330359	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P330380	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P330500	MS
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P330560	
1921751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P330348	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Bishop Tidal

Collection Date/Time: 08/15/2017 10:55

Field ID: G1SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921803	EPA 8321B	Sucralose**	0.56		ug/L	P330383	
	USGS O-2060-01	2,4-D	0.26		ug/L	P330313	
		Diuron	0.0056		ug/L	P330313	
		Fenuron	0.0080	U	ug/L	P330313	
		Imidacloprid	0.084		ug/L	P330313	
		Bentazon	0.021		ug/L	P330313	
		Linuron	0.0040	U	ug/L	P330313	
		Acetaminophen**	0.0080	U	ug/L	P330313	
		MCPD	0.0020	U	ug/L	P330313	
		Carbamazepine**	0.0016		ug/L	P330313	
		Triclopyr**	0.0040	U	ug/L	P330313	
		Primidone**	0.0047	I	ug/L	P330313	
		Fluridone**	0.030		ug/L	P330313	RPD

Ref. Method and Comment:

EPA 8321B: MS accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

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

Sample Location: Cedar Tidal

Collection Date/Time: 08/15/2017 11:40

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921746	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P330338	
	SM 2320 B-97	Total Alkalinity	141	A	mg CaCO3/L	P330607	
	SM 2540 D-97	TSS	6	IA	mg/L	P330924	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P330610	
1921749	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P330516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P330359	

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921749	EPA 353.2 Rev. 2.0	NO2NO3-N	0.065		mg N/L	P330380	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P330500	MS
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P330560	
1921752	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P330348	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Cedar Tidal

Collection Date/Time: 08/15/2017 11:40

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921804	EPA 8321B	Sucralose**	1.1		ug/L	P330383	
	USGS O-2060-01	2,4-D	0.062		ug/L	P330313	
		Diuron	0.0027	I	ug/L	P330313	
		Fenuron	0.0080	U	ug/L	P330313	
		Imidacloprid	0.027		ug/L	P330313	
		Bentazon	0.033		ug/L	P330313	
		Linuron	0.0040	U	ug/L	P330313	
		Acetaminophen**	0.0080	U	ug/L	P330313	
		MCP	0.0061	I	ug/L	P330313	
		Carbamazepine**	0.0013	I	ug/L	P330313	
		Triclopyr**	0.0040	U	ug/L	P330313	
		Primidone**	0.012	I	ug/L	P330313	
		Fluridone**	0.014		ug/L	P330313	RPD

Ref. Method and Comment:

EPA 8321B: MS accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

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

Sample Location: Klosterman TP 222

Collection Date/Time: 08/15/2017 12:35

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921747	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P330338	
	SM 2320 B-97	Total Alkalinity	136		mg CaCO3/L	P330606	
	SM 2540 D-97	TSS	11		mg/L	P330922	
	SM 4500 F-C-97	Fluoride	0.47		mg F/L	P330609	
1921750	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P330516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P330359	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330380	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P330500	MS
	SM 5310 B-00	Organic Carbon	21		mg C/L	P330659	
1921753	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P330348	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Klosterman TP 222

Collection Date/Time: 08/15/2017 12:35

Field ID: G5SW0035 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921805	EPA 8321B	Sucralose**	6.8		ug/L	P330383	
	USGS O-2060-01	2,4-D	1.2		ug/L	P330313	
		Diuron	0.0023	I	ug/L	P330313	
		Fenuron	0.0080	U	ug/L	P330313	
		Imidacloprid	0.0095		ug/L	P330313	
		Bentazon	0.12		ug/L	P330313	
		Linuron	0.0040	U	ug/L	P330313	
		Acetaminophen**	0.0080	U	ug/L	P330313	
		MCP	0.22		ug/L	P330313	
		Carbamazepine**	0.021		ug/L	P330313	
		Triclopyr**	0.0040	U	ug/L	P330313	
		Primidone**	0.052		ug/L	P330313	
		Fluridone**	0.0044		ug/L	P330313	RPD

Ref. Method and Comment:
 EPA 8321B: MS accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample.
 USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.
 USGS O-2060-01: MS accuracy for 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: P330338

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P330516

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P330359

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330380

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P330500

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330348

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

Reference Method: EPA 8321B
Batch ID: P330383

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P330606

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

Reference Method: SM 2320 B-97
Batch ID: P330607

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

Reference Method: SM 2540 D-97
Batch ID: P330922

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P330924

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P330609

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P330610

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P330560

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

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
 Batch ID: P330659

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

Reference Method: USGS O-2060-01
 Batch ID: P330313

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 350.1 Rev. 2.0
 Batch ID: P330516

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P330359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330380

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P330500

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P330348

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P330383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	125		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P330606

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

Reference Method: SM 2320 B-97
 Batch ID: P330607

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

Reference Method: SM 4500 F-C-97
 Batch ID: P330609

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 4500 F-C-97
 Batch ID: P330610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P330560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P330659

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

Reference Method: USGS O-2060-01
 Batch ID: P330313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	70.9		P	40 - 150
Acetaminophen	77.2		P	30 - 150
Bentazon	79.8		P	40 - 150
Carbamazepine	84.8		P	40 - 150
Diuron	91.8		P	40 - 150
Fenuron	90.6		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	76.0		P	40 - 160
Linuron	99.0		P	40 - 150
MCPP	57.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P330313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	85.2		P	40 - 150
Triclopyr	62.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P330359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921407	Kjeldahl Nitrogen	99.8	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921274	NO2NO3-N	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P330500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921819	Total-P	101	87.5	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P330348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921752	O-Phosphate-P	94.1	94.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P330609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921686	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P330610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921746	Fluoride	95.9	97.5	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P330560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921407	Organic Carbon	92.4	91.8	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P330659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921787	Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P330313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921540	Acetaminophen	110	104	P/P	30 - 150
1921540	Bentazon	58.3	56.0	P/P	40 - 150
1921540	Carbamazepine	94.5	95.8	P/P	40 - 150
1921540	Diuron	72.1	72.8	P/P	40 - 150
1921540	Fenuron	78.6	81.9	P/P	40 - 150
1921540	Fluridone	96.6	62.0	P/P	40 - 150
1921540	Linuron	95.2	88.2	P/P	40 - 150
1921540	MCP	80.1	74.2	P/P	40 - 150
1921540	Primidone	115	115	P/P	40 - 150
1921540	Triclopyr	78.7	69.0	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P330338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921716	Turbidity	10.4	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921748	Ammonia-N	0.933	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921407	Kjeldahl Nitrogen	2.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921274	NO2NO3-N	0.468	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921819	Total-P	12.5	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921752	O-Phosphate-P	0.542	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P330383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921620	Sucralose	0.491	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P330606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921686	Total Alkalinity	0.213	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P330607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921746	Total Alkalinity	0.133	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P330609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921686	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P330610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921746	Fluoride	0.992	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P330560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921407	Organic Carbon	0.492	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P330659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921787	Organic Carbon	1.09	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P330313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921540	2,4-D	7.60	Spike	P	0 - 30
1921540	Acetaminophen	3.84	Spike	P	0 - 30
1921540	Bentazon	2.34	Spike	P	0 - 30
1921540	Carbamazepine	1.39	Spike	P	0 - 30
1921540	Diuron	0.414	Spike	P	0 - 30
1921540	Fenuron	4.09	Spike	P	0 - 30
1921540	Fluridone	38.5	Spike	F	0 - 30
1921540	Imidacloprid	0.475	Spike	P	0 - 30
1921540	Linuron	7.68	Spike	P	0 - 30
1921540	MCP	7.23	Spike	P	0 - 30
1921540	Primidone	0.226	Spike	P	0 - 30
1921540	Triclopyr	13.1	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: 1921803
Field Sample ID: G1SW0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	90.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.4	P	30 - 160
EPA 8321B	Diuron-d6	79.8	P	30 - 160
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	60.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	109	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	90.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	98.4	P	30 - 160
USGS O-2060-01	Diuron-d6	79.8	P	30 - 160
USGS O-2060-01	Primidone-d5	120	P	30 - 160
USGS O-2060-01	Sucralose-d6	60.3	P	40 - 160

Lab Sample ID: 1921804
Field Sample ID: G5SW0128

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	90.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.7	P	30 - 160
EPA 8321B	Diuron-d6	72.7	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1921804
 Field Sample ID: G5SW0128

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	86.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	84.8	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	90.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	92.7	P	30 - 160
USGS O-2060-01	Diuron-d6	72.7	P	30 - 160
USGS O-2060-01	Primidone-d5	111	P	30 - 160
USGS O-2060-01	Sucralose-d6	86.5	P	40 - 160

Lab Sample ID: 1921805
 Field Sample ID: G5SW0035

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	88.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.8	P	30 - 160
EPA 8321B	Diuron-d6	62.6	P	30 - 160
EPA 8321B	Primidone-d5	95.5	P	30 - 160
EPA 8321B	Sucralose-d6	41.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	128	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	88.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	72.8	P	30 - 160
USGS O-2060-01	Diuron-d6	62.6	P	30 - 160
USGS O-2060-01	Primidone-d5	95.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	41.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A78439
 Included Lab Sample IDs: 1921745, 1921746, 1921747

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A78443
 Included Lab Sample IDs: 1921751, 1921752, 1921753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	99.1	98.7	P/P	90 - 110
O-Phosphate-P	99.1	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A78455
 Included Lab Sample IDs: 1921748, 1921749, 1921750

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78513

Included Lab Sample IDs: 1921748, 1921749, 1921750

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

Reference Method: SM 5310 B-00

Run ID: A78526

Included Lab Sample IDs: 1921748, 1921749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	94.8	P/P	90 - 110
Organic Carbon	96.3	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78532

Included Lab Sample IDs: 1921748, 1921749, 1921750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78540

Included Lab Sample IDs: 1921748, 1921749, 1921750

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

Reference Method: SM 2320 B-97

Run ID: A78552

Included Lab Sample IDs: 1921745, 1921746, 1921747

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A78552

Included Lab Sample IDs: 1921745, 1921746, 1921747

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.5	99.5	P/P	90 - 110
Fluoride	99.5	98.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78572

Included Lab Sample IDs: 1921750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78596

Included Lab Sample IDs: 1921803, 1921804, 1921805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.7	82.1	P/P	50 - 150
Acetaminophen	78.6	75.7	P/P	60 - 150
Bentazon	106	113	P/P	50 - 150
Carbamazepine	82.2	82.3	P/P	60 - 150
Diuron	89.3	87.3	P/P	60 - 150
Fenuron	88.8	89.9	P/P	60 - 150
Fluridone	100	101	P/P	60 - 160
Imidacloprid	78.4	80.0	P/P	60 - 150
Linuron	94.0	105	P/P	60 - 150
MCP	69.3	65.8	P/P	50 - 150
Primidone	86.8	90.5	P/P	60 - 150
Triclopyr	78.8	66.8	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A78655

Included Lab Sample IDs: 1921805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.0	81.1	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A78750

Included Lab Sample IDs: 1921803, 1921804, 1921805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	120	119	P/P	60 - 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				10.4	
EPA 350.1 Rev. 2.0	Ammonia-N	101				0.933
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	99.8 103			2.21
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	105	107 106			0.468
EPA 365.1 Rev. 2.0	Total-P	99.8	101 87.5			12.5
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	94.1 94.9			0.542
EPA 8321B	Sucralose	125				0.491
SM 2320 B-97	Total Alkalinity	102			0.213	
	Total Alkalinity	103			0.133	
SM 4500 F-C-97	Fluoride	95.3	98.0 98.0			0.0
	Fluoride	97.7	95.9 97.5			0.992
SM 5310 B-00	Organic Carbon	95.6	92.4 91.8			0.492
	Organic Carbon	96.0	101			1.09
USGS O-2060-01	2,4-D	70.9				7.60

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
USGS O-2060-01	Acetaminophen	77.2	110	104		3.84
	Bentazon	79.8	58.3	56.0		2.34
	Carbamazepine	84.8	94.5	95.8		1.39
	Diuron	91.8	72.1	72.8		0.414
	Fenuron	90.6	78.6	81.9		4.09
	Fluridone	101	96.6	62.0		38.5
	Imidacloprid	76.0				0.475
	Linuron	99.0	95.2	88.2		7.68
	MCPP	57.5	80.1	74.2		7.23
	Primidone	85.2	115	115		0.226
	Triclopyr	62.3	78.7	69.0		13.1

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1921745, 1921746, 1921747
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1921748, 1921749, 1921750
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1921748, 1921749, 1921750
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1921748, 1921749, 1921750
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1921748, 1921749, 1921750
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1921751, 1921752, 1921753
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1921803, 1921804, 1921805
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1921745, 1921746, 1921747
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1921745, 1921746, 1921747
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1921745, 1921746, 1921747
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1921748, 1921749, 1921750
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1921803, 1921804, 1921805
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1921803, 1921804, 1921805

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	08/16/2017			08/16/2017 15:34	DeAsia Armster	1921745, 1921746, 1921747
EPA 350.1 Rev. 2.0	08/16/2017			08/17/2017	Sofia Elnemr	1921748, 1921749, 1921750
EPA 351.2 Rev. 2.0	08/16/2017	08/17/2017	Adrian Shelby	08/21/2017	Joseph Suarez	1921748, 1921749, 1921750
EPA 353.2 Rev. 2.0	08/16/2017			08/17/2017	Beverly Y. Sanders	1921748, 1921749, 1921750
EPA 365.1 Rev. 2.0	08/16/2017	08/18/2017	Sima Feizi	08/21/2017	Lipi Saha	1921748, 1921749, 1921750
EPA 365.1 Rev. 2.0 dissolved	08/16/2017			08/16/2017 14:53	Megan Treadwell	1921752
	08/16/2017			08/16/2017 15:35	Megan Treadwell	1921751
	08/16/2017			08/16/2017 16:02	Megan Treadwell	1921753
EPA 8321B	08/16/2017	08/24/2017	Julie Michelle Frank	08/31/2017	Julie Michelle Frank	1921803, 1921804, 1921805
SM 2320 B-97	08/16/2017			08/18/2017	Dale L. Simmons	1921745, 1921746, 1921747
SM 2540 D-97	08/16/2017			08/18/2017	Yijie Li	1921745, 1921746, 1921747
SM 4500 F-C-97	08/16/2017			08/18/2017	Dale L. Simmons	1921745, 1921746, 1921747
SM 5310 B-00	08/16/2017			08/19/2017	Ping Hua	1921748, 1921749
	08/16/2017			08/22/2017	Ping Hua	1921750
USGS O-2060-01	08/16/2017	08/17/2017	Hoor Shaik	08/21/2017	Juyoung Kim	1921803, 1921804, 1921805
	08/16/2017	08/17/2017	Hoor Shaik	08/22/2017	Juyoung Kim	1921805