

Chemical Analysis Report

SE-DIST-2018-01-23-01

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

Event Description: **SMP- St. Johns**
Request ID: **RQ-2018-01-22-58**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

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Certified by: Colin Wright, Program Administrator

Date Certified: 13-FEB-2018 10:10

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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: Padgett Branch @ 441

Collection Date/Time: 01/22/2018 11:40

Field ID: G3SE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960913	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P338646	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P338759	
		Sulfate	0.92		mg SO4/L	P338762	
	SM 2120 B	Color (true)	280		PCU	P338636	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P338923	
	SM 2540 C-97	TDS	98		mg/L	P338982	
	SM 2540 D-97	TSS	3	I	mg/L	P338974	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P339356	
1960914	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P338943	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P338664	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P338714	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P338795	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P338921	
1960915	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.099		mg P/L	P338654	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Sweetwater Branch @ 441

Collection Date/Time: 01/22/2018 12:10

Field ID: G3SE0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960916	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P338646	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P338759	
		Sulfate	3.7		mg SO4/L	P338762	
	SM 2120 B	Color (true)	110		PCU	P338636	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P338923	
	SM 2540 C-97	TDS	87		mg/L	P338983	
	SM 2540 D-97	TSS	3	I	mg/L	P338975	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P339356	
1960917	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P338943	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P338664	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P338714	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P338795	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P338921	
1960918	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P338654	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Fort Drum Creek @ 441

Collection Date/Time: 01/22/2018 12:30

Field ID: G3SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960937	EPA 8321B	Sucralose**	0.010	U	ug/L	P338457	

Field ID: G3SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960937	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P338463	
		Diuron	0.0020	U	ug/L	P338463	
		Fenuron	0.0080	U	ug/L	P338463	
		Imidacloprid	0.0030	I	ug/L	P338463	
		Bentazon	0.0015	I	ug/L	P338463	
		Linuron	0.0040	U	ug/L	P338463	
		Acetaminophen**	0.0080	U	ug/L	P338463	
		MCPD	0.0020	U	ug/L	P338463	
		Carbamazepine**	4.0E-04	U	ug/L	P338463	
		Triclopyr**	0.0040	U	ug/L	P338463	
		Primidone**	0.0040	U	ug/L	P338463	
		Fluridone**	5.6E-04	I	ug/L	P338463	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338646

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338759

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338762

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338664

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338714

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: P338795

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338654

Component	Result	Code	Units
O-Phosphate-P	0.0040		
O-Phosphate-P	0.004	U	

Reference Method: EPA 8321B
Batch ID: P338457

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P338636

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P338923

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

Reference Method: SM 2540 C-97
Batch ID: P338982

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P338983

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338974

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338975

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P338921

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

Reference Method: USGS O-2060-01
Batch ID: P338463

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	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	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: P338759

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338762

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338664

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338714

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: P338795

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.4		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P338923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P338921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	79.4		P	40 - 150
Acetaminophen	97.1		P	30 - 150
Bentazon	80.1		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	89.8		P	40 - 150
Fenuron	122		P	40 - 150
Fluridone	113		P	40 - 150
Imidacloprid	112		P	40 - 160
Linuron	99.2		P	40 - 150
MCPP	81.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P338463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	115		P	40 - 150
Triclopyr	72.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960982	Chloride	103		P	90 - 110
1960997	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960982	Sulfate	101		P	90 - 110
1960997	Sulfate	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960866	Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960899	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960899	Total-P	98.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960918	O-Phosphate-P	96.8	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960487	Sucralose	97.9	93.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960705	Fluoride	97.7	93.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P338921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960558	Organic Carbon	96.6	97.5	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960453	2,4-D	133	138	P/P	40 - 150
1960453	Acetaminophen	99.9	96.7	P/P	30 - 150
1960453	Bentazon	95.9	97.0	P/P	30 - 150
1960453	Carbamazepine	107	106	P/P	40 - 150
1960453	Diuron	94.8	95.5	P/P	40 - 150
1960453	Fenuron	113	109	P/P	40 - 150
1960453	Fluridone	106	110	P/P	40 - 150
1960453	Imidacloprid	120	118	P/P	40 - 160
1960453	Linuron	99.9	99.1	P/P	40 - 150
1960453	MCP	111	119	P/P	40 - 150
1960453	Primidone	114	112	P/P	40 - 150
1960453	Triclopyr	118	126	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960862	Turbidity	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960982	Chloride	0.630	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960982	Sulfate	0.710	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960866	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960899	Kjeldahl Nitrogen	0.554	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960899	NO2NO3-N	0.456	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960899	Total-P	2.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960918	O-Phosphate-P	0.336	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P338457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960487	Sucralose	4.82	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P338636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960861	Color (true)	9.65	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P338923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961439	Total Alkalinity	0.671	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P338982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960601	TDS	3.51	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P338983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960959	TDS	1.07	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960705	Fluoride	2.90	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P338921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960558	Organic Carbon	0.641	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P338463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960453	2,4-D	3.61	Spike	P	0 - 30
1960453	Acetaminophen	3.31	Spike	P	0 - 30
1960453	Bentazon	1.19	Spike	P	0 - 30
1960453	Carbamazepine	0.659	Spike	P	0 - 30
1960453	Diuron	0.799	Spike	P	0 - 30
1960453	Fenuron	3.70	Spike	P	0 - 30
1960453	Fluridone	3.90	Spike	P	0 - 30
1960453	Imidacloprid	1.68	Spike	P	0 - 30
1960453	Linuron	0.804	Spike	P	0 - 30
1960453	MCPP	7.48	Spike	P	0 - 30
1960453	Primidone	2.39	Spike	P	0 - 30
1960453	Triclopyr	5.98	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: 1960937
Field Sample ID: G3SE0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	95.8	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	99.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	99.0	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	119	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	95.8	P	30 - 160
USGS O-2060-01	Primidone-d5	114	P	30 - 160
USGS O-2060-01	Sucralose-d6	99.6	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A81607
Included Lab Sample IDs: 1960913, 1960916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	98.3	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81610
Included Lab Sample IDs: 1960913, 1960916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81611
Included Lab Sample IDs: 1960915, 1960918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.5	P/P	90 - 110
O-Phosphate-P	99.9	98.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81616
Included Lab Sample IDs: 1960913, 1960916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	101	P/P	90 - 110
Sulfate	97.8	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A81625
Included Lab Sample IDs: 1960914, 1960917

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81625

Included Lab Sample IDs: 1960914, 1960917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81657

Included Lab Sample IDs: 1960914, 1960917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81670

Included Lab Sample IDs: 1960914, 1960917

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

Reference Method: USGS O-2060-01

Run ID: A81671

Included Lab Sample IDs: 1960937

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.1	82.3	P/P	50 - 150
Acetaminophen	101	101	P/P	60 - 150
Bentazon	103	97.6	P/P	50 - 150
Carbamazepine	112	112	P/P	60 - 150
Diuron	111	114	P/P	60 - 150
Fenuron	105	109	P/P	60 - 150
Fluridone	119	124	P/P	60 - 160
Imidacloprid	107	107	P/P	60 - 150
Linuron	104	115	P/P	60 - 150
MCPP	94.9	90.2	P/P	50 - 150
Primidone	103	107	P/P	60 - 150
Triclopyr	89.6	87.0	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A81689

Included Lab Sample IDs: 1960913, 1960916

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

Reference Method: SM 5310 B-00

Run ID: A81692

Included Lab Sample IDs: 1960914, 1960917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A81704
 Included Lab Sample IDs: 1960914, 1960917

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

Reference Method: EPA 8321B
 Run ID: A81725
 Included Lab Sample IDs: 1960937

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.8	108	P/P	60 - 150

Reference Method: SM 4500 F-C-97
 Run ID: A81863
 Included Lab Sample IDs: 1960913, 1960916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.5	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						1.59	
EPA 300.0 Rev. 2.1	Chloride	104		103	101		0.630	
	Sulfate	101		101	97.0		0.710	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2		98.7	101			1.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105						0.554
EPA 353.2 Rev. 2.0	NO2NO3-N	104		105	106			0.456
EPA 365.1 Rev. 2.0	Total-P	97.8		98.0	100			2.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7		96.8	97.4			0.336
EPA 8321B	Sucralose	97.4		97.9	93.1			4.82
SM 2120 B	Color (true)						9.65	
SM 2320 B-97	Total Alkalinity	99.5					0.671	
SM 2540 C-97	TDS						3.51	
	TDS						1.07	
SM 4500 F-C-97	Fluoride	96.0		97.7	93.6			2.90
SM 5310 B-00	Organic Carbon	96.6		96.6	97.5			0.641
USGS O-2060-01	2,4-D	79.4		138	133			3.61
	Acetaminophen	97.1		99.9	96.7			3.31
	Bentazon	80.1		97.0	95.9			1.19
	Carbamazepine	102		107	106			0.659
	Diuron	89.8		94.8	95.5			0.799
	Fenuron	122		113	109			3.70
	Fluridone	113		110	106			3.90
	Imidacloprid	112		120	118			1.68
	Linuron	99.2		99.9	99.1			0.804
	MCPP	81.4		119	111			7.48

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
USGS O-2060-01	Primidone	115	114	112			2.39
	Triclopyr	72.2	126	118			5.98

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1960913, 1960916
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1960913, 1960916
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1960913, 1960916
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1960914, 1960917
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1960914, 1960917
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1960914, 1960917
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1960914, 1960917
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1960915, 1960918
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1960937
SM 2120 B / E31780	True Color measured at 450 nm	1960913, 1960916
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1960913, 1960916
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1960913, 1960916
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1960913, 1960916
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1960913, 1960916
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1960914, 1960917
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1960937
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1960937

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	01/23/2018			01/23/2018 15:16	DeAsia Armster	1960913, 1960916
EPA 300.0 Rev. 2.1	01/23/2018			01/24/2018	Julia Storbeck	1960913, 1960916
EPA 350.1 Rev. 2.0	01/23/2018			01/26/2018	Ping Hua	1960914, 1960917
EPA 351.2 Rev. 2.0	01/23/2018	01/24/2018	Adrian Shelby	01/25/2018	Joseph Suarez	1960914, 1960917
EPA 353.2 Rev. 2.0	01/23/2018			01/24/2018	Lauren Bottorf	1960914, 1960917
EPA 365.1 Rev. 2.0	01/23/2018	01/25/2018	Sima Feizi	01/26/2018	Lipi Saha	1960914, 1960917
EPA 365.1 Rev. 2.0 dissolved	01/23/2018			01/23/2018 15:09	Megan Treadwell	1960918
	01/23/2018			01/23/2018 16:19	Megan Treadwell	1960915
EPA 8321B	01/23/2018	01/25/2018	Juyoung Kim	01/25/2018	Juyoung Kim	1960937
SM 2120 B	01/23/2018			01/23/2018 15:00	Tanya Welborn	1960916
	01/23/2018			01/23/2018 15:39	Tanya Welborn	1960913
SM 2320 B-97	01/23/2018			01/27/2018	Lauren Bottorf	1960913, 1960916
SM 2540 C-97	01/23/2018			01/24/2018	Yijie Li	1960913, 1960916
SM 2540 D-97	01/23/2018			01/24/2018	Yijie Li	1960913, 1960916
SM 4500 F-C-97	01/23/2018			02/05/2018	Dale L. Simmons	1960913, 1960916
SM 5310 B-00	01/23/2018			01/27/2018	Megan Treadwell	1960914, 1960917
USGS O-2060-01	01/23/2018	01/23/2018	Hoor Shaik	01/24/2018	Julie Michelle Frank	1960937
	01/23/2018	01/23/2018	Hoor Shaik	01/25/2018	Julie Michelle Frank	1960937