

Chemical Analysis Report

WQAP-2017-10-13-03

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

Event Description: **Armistead, Bellows**
Request ID: **RQ-2017-09-11-25**
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: 03-NOV-2017 11:51

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: Bellows Outlet

Collection Date/Time: 10/12/2017 09:00

Field ID: G1SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936916	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P333467	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P333468	
		Sulfate	5.7		mg SO4/L	P333469	
	SM 2120 B	Color (true)	51		PCU	P333388	
	SM 2320 B-97	Total Alkalinity	62		mg CaCO3/L	P333739	
	SM 2540 C-97	TDS	106		mg/L	P333868	
	SM 2540 D-97	TSS	6	I	mg/L	P333934	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P333742	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.43		mg N/L	P333617	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P333733	
1936917	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P333993	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P333601	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P333687	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.005	I	mg P/L	P333373	
	dissolved						

Ref. Method and Comment:

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

Sample Location: Bellows Outlet

Collection Date/Time: 10/12/2017 09:00

Field ID: G1SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936926	EPA 8321B	Sucralose**	0.096		ug/L	P333231	
	USGS O-2060-01	2,4-D	0.24		ug/L	P333480	
		Diuron	0.0038		ug/L	P334168	
		Fenuron	0.0080	U	ug/L	P334168	
		Imidacloprid	0.0089		ug/L	P334168	
		Bentazon	8.0E-04	U	ug/L	P333480	MS
		Linuron	0.0040	U	ug/L	P334168	
		Acetaminophen**	0.16		ug/L	P334168	
		MCP	0.0020	U	ug/L	P333480	
		Carbamazepine**	6.6E-04	I	ug/L	P334168	
		Triclopyr**	0.0040	U	ug/L	P333480	
		Primidone**	0.0040	U	ug/L	P334168	
		Fluridone**	0.011		ug/L	P334168	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid and fluridone 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: P333467

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333733

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333373

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

Reference Method: EPA 8321B
Batch ID: P333231

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P333388

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P333739

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

Reference Method: SM 2540 C-97
Batch ID: P333868

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333934

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333687

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

Reference Method: USGS O-2060-01
Batch ID: P333480

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P334168

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333373

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

Reference Method: EPA 8321B
Batch ID: P333231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	91.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333739

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P333742

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

Reference Method: SM 5310 B-00
Batch ID: P333687

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333480

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.6		P	40 - 150
Bentazon	31.0		P	30 - 150
MCP	63.8		P	40 - 150
Triclopyr	65.2		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P334168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	132		P	30 - 150
Carbamazepine	148		P	40 - 150
Diuron	73.4		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	87.9		P	40 - 150
Imidacloprid	116		P	40 - 160
Linuron	109		P	40 - 150
Primidone	91.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936799	Chloride	100		P	90 - 110
1936916	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936799	Sulfate	98.8		P	90 - 110
1936916	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936814	Ammonia-N	99.3	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936817	Kjeldahl Nitrogen	94.5	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936899	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936899	Total-P	96.1	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936821	O-Phosphate-P	95.8	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P333231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936514	Sucralose	40.3	41.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936807	Fluoride	98.8	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936801	Organic Carbon	97.0	97.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937156	2,4-D	73.9	76.8	P/P	40 - 150
1937156	Bentazon	25.0	26.6	F/F	30 - 150
1937156	MCPP	50.8	48.6	P/P	40 - 150
1937156	Triclopyr	57.4	50.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P334168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937156	Acetaminophen	94.0	89.2	P/P	30 - 150
1937156	Carbamazepine	116	110	P/P	40 - 150
1937156	Diuron	83.7	74.9	P/P	40 - 150
1937156	Fenuron	87.7	87.1	P/P	40 - 150
1937156	Linuron	99.6	93.8	P/P	40 - 150
1937156	Primidone	105	101	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P333467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936854	Turbidity	7.87	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936799	Chloride	0.533	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936799	Sulfate	0.539	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P333617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936814	Ammonia-N	3.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P333733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936817	Kjeldahl Nitrogen	3.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P333993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936899	NO2NO3-N	0.952	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P333601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936899	Total-P	0.0937	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P333373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936821	O-Phosphate-P	3.18	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P333231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936514	Sucralose	1.76	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P333388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936813	Color (true)	3.20	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P333739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Total Alkalinity	1.68	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P333868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936898	TDS	2.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P333742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936807	Fluoride	0.472	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00

Batch ID: P333687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936801	Organic Carbon	0.464	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P333480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937156	2,4-D	2.77	Spike	P	0 - 30
1937156	Bentazon	2.17	Spike	P	0 - 30
1937156	MCP	4.43	Spike	P	0 - 30
1937156	Triclopyr	13.3	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P334168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937156	Acetaminophen	5.26	Spike	P	0 - 30
1937156	Carbamazepine	5.31	Spike	P	0 - 30
1937156	Diuron	7.56	Spike	P	0 - 30
1937156	Fenuron	0.554	Spike	P	0 - 30
1937156	Fluridone	15.2	Spike	P	0 - 30
1937156	Imidacloprid	1.58	Spike	P	0 - 30
1937156	Linuron	5.98	Spike	P	0 - 30
1937156	Primidone	3.43	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

Lab Sample ID: 1936926
Field Sample ID: G1SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	94.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	119	P	30 - 160
EPA 8321B	Diuron-d6	82.5	P	30 - 160
EPA 8321B	Primidone-d5	129	P	30 - 160
EPA 8321B	Sucralose-d6	53.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	63.8	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	94.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	119	P	30 - 160
USGS O-2060-01	Diuron-d6	82.5	P	30 - 160
USGS O-2060-01	Primidone-d5	129	P	30 - 160
USGS O-2060-01	Sucralose-d6	53.2	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79548
Included Lab Sample IDs: 1936918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.2	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A79554
Included Lab Sample IDs: 1936916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79592
Included Lab Sample IDs: 1936916

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79593
Included Lab Sample IDs: 1936916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	105	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A79639
Included Lab Sample IDs: 1936917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A79660
Included Lab Sample IDs: 1936917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A79673
Included Lab Sample IDs: 1936926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.1	91.6	P/P	60 - 150

Reference Method: SM 2320 B-97
Run ID: A79678
Included Lab Sample IDs: 1936916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A79678
Included Lab Sample IDs: 1936916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79679

Included Lab Sample IDs: 1936917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.3	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79762

Included Lab Sample IDs: 1936917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	94.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79780

Included Lab Sample IDs: 1936917

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

Reference Method: USGS O-2060-01

Run ID: A79847

Included Lab Sample IDs: 1936926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	100	P/P	50 - 150
Acetaminophen	102	108	P/P	60 - 150
Bentazon	101	94.9	P/P	50 - 150
Carbamazepine	108	111	P/P	60 - 150
Diuron	104	107	P/P	60 - 150
Fenuron	104	106	P/P	60 - 150
Fluridone	108	105	P/P	60 - 160
Imidacloprid	96.4	108	P/P	60 - 150
Linuron	107	110	P/P	60 - 150
MCPP	107	102	P/P	50 - 150
Primidone	99.8	97.8	P/P	60 - 150
Triclopyr	109	107	P/P	50 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				7.87	
EPA 300.0 Rev. 2.1	Chloride	102	100	102	0.533	
	Sulfate	95.0	98.8	98.1	0.539	
EPA 350.1 Rev. 2.0	Ammonia-N	103	99.3	95.1		3.86
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.3	94.5	98.3		3.44
EPA 353.2 Rev. 2.0	NO2NO3-N	103	106	104		0.952
EPA 365.1 Rev. 2.0	Total-P	94.4	96.1	96.0		0.0937

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.8	98.9		3.18
EPA 8321B	Sucralose	91.6	40.3	41.0		1.76
SM 2120 B	Color (true)				3.20	
SM 2320 B-97	Total Alkalinity	102			1.68	
SM 2540 C-97	TDS				2.51	
SM 4500 F-C-97	Fluoride	96.0	98.8	99.3		0.472
SM 5310 B-00	Organic Carbon	98.4	97.0	97.6		0.464
USGS O-2060-01	2,4-D	64.6	73.9	76.8		2.77
	Acetaminophen	132	94.0	89.2		5.26
	Bentazon	31.0	25.0	26.6		2.17
	Carbamazepine	148	116	110		5.31
	Diuron	73.4	83.7	74.9		7.56
	Fenuron	109	87.7	87.1		0.554
	Fluridone	87.9				15.2
	Imidacloprid	116				1.58
	Linuron	109	99.6	93.8		5.98
	MCPP	63.8	50.8	48.6		4.43
	Primidone	91.6	105	101		3.43
	Triclopyr	65.2	57.4	50.2		13.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1936916
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1936916
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1936916
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1936917
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1936917
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1936917
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1936917
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1936918
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1936926
SM 2120 B / E31780	True Color measured at 450 nm	1936916
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1936916
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1936916
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1936916
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1936916
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1936917
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1936926
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1936926

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	10/13/2017			10/13/2017 15:53	Blanca Fach	1936916
EPA 300.0 Rev. 2.1	10/13/2017			10/16/2017	Irina Carbone	1936916
EPA 350.1 Rev. 2.0	10/13/2017			10/18/2017	Sofia Elnemr	1936917
EPA 351.2 Rev. 2.0	10/13/2017	10/20/2017	Adrian Shelby	10/23/2017	Joseph Suarez	1936917
EPA 353.2 Rev. 2.0	10/13/2017			10/24/2017	Beverly Y. Sanders	1936917
EPA 365.1 Rev. 2.0	10/13/2017	10/18/2017	Sima Feizi	10/19/2017	Lipi Saha	1936917
EPA 365.1 Rev. 2.0 dissolved	10/13/2017			10/13/2017 14:14	Megan Treadwell	1936918
EPA 8321B	10/13/2017	10/18/2017	Juyoung Kim	10/19/2017	Juyoung Kim	1936926
SM 2120 B	10/13/2017			10/13/2017 16:36	Julia Storbeck	1936916
SM 2320 B-97	10/13/2017			10/20/2017	Dale L. Simmons	1936916
SM 2540 C-97	10/13/2017			10/18/2017	Yijie Li	1936916
SM 2540 D-97	10/13/2017			10/18/2017	Yijie Li	1936916
SM 4500 F-C-97	10/13/2017			10/20/2017	Dale L. Simmons	1936916
SM 5310 B-00	10/13/2017			10/19/2017	Ping Hua	1936917
USGS O-2060-01	10/13/2017	10/18/2017	Hoor Shaik	10/24/2017	Julie Michelle Frank	1936926