

Chemical Analysis Report

WQAP-2017-04-14-04

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

Event Description: **RUN 13**
Request ID: **RQ-2017-04-10-22**
Customer: **WQAP**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 11-MAY-2017 11:37



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: Lake Chapman

Collection Date/Time: 04/13/2017 14:30

Field ID: G1SW0065

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889382	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P323516	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P324109	
		Sulfate	9.8		mg SO4/L	P323862	
	SM 2120 B	Color (true)	25		PCU	P323441	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P324011	
	SM 2540 C-97	TDS	130		mg/L	P323872	
	SM 2540 D-97	TSS	4	I	mg/L	P324583	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P324405	
1889383	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P323433	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P323600	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323725	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P323566	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P323472	
1889384	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323444	

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: Mill Crk

Collection Date/Time: 04/13/2017 09:30

Field ID: G2SW0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889389	EPA 8321B	Sucralose**	0.029	I	ug/L	P323416	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P323392	
		Diuron	0.0040	U	ug/L	P323392	MS
		Fenuron	0.0080	U	ug/L	P323392	
		Imidacloprid	0.0040	U	ug/L	P323392	
		Bentazon	0.0040	U	ug/L	P323392	
		Linuron	0.0040	U	ug/L	P323392	MS, RPD
		Acetaminophen**	0.010	U	ug/L	P323392	
		MCP	0.0040	U	ug/L	P323392	
		Carbamazepine**	4.0E-04	U	ug/L	P323392	
		Triclopyr**	0.010	U	ug/L	P323392	
		Primidone**	0.0080	U	ug/L	P323392	
		Fluridone**	4.0E-04	U	ug/L	P323392	

Ref. Method and Comment:

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

USGS O-2060-01: Results confirmed in re-extraction. MS accuracy and precision for 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: P323516

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323516

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323433

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323600

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323725

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323566

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323444

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

Reference Method: EPA 8321B
Batch ID: P323416

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P323441

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P324011

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

Reference Method: SM 2540 C-97
Batch ID: P323872

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324583

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324405

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323472

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

Reference Method: USGS O-2060-01
Batch ID: P323392

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323433

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323725

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323566

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323444

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

Reference Method: EPA 8321B
Batch ID: P323416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	115		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P324011

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: P324405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P323472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P323392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.2		P	40 - 140
Acetaminophen	76.8		P	40 - 140
Bentazon	134		P	40 - 140
Carbamazepine	97.2		P	40 - 140
Diuron	81.2		P	40 - 140
Fenuron	87.6		P	40 - 140
Fluridone	103		P	40 - 140
Imidacloprid	67.6		P	40 - 160
Linuron	52.8		P	40 - 140
MCP	98.0		P	40 - 140
Primidone	61.2		P	40 - 140
Triclopyr	100		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889382	Sulfate	108		P	90 - 110
1889480	Sulfate	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889382	Chloride	100		P	90 - 110
1889480	Chloride	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889311	Ammonia-N	103	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889403	Kjeldahl Nitrogen	90.0	92.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889322	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889383	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889171	O-Phosphate-P	98.0	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P323416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888994	Sucralose	103	101	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P324405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889317	Fluoride	100	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889178	Organic Carbon	104	102	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P323392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888781	2,4-D	131	127	P/P	40 - 140
1888781	Acetaminophen	79.6	66.8	P/P	40 - 140
1888781	Carbamazepine	47.2	52.8	P/P	40 - 140
1888781	Diuron	40.8	37.2	P/F	40 - 140
1888781	Fenuron	42.0	41.2	P/P	40 - 140
1888781	Imidacloprid	67.3	72.9	P/P	40 - 160
1888781	Linuron	24.8	33.6	F/F	40 - 140
1888781	MCP	137	123	P/P	40 - 140
1888781	Primidone	53.6	58.0	P/P	40 - 140
1888781	Triclopyr	106	74.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889314	Turbidity	2.74	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889480	Sulfate	0.0628	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889480	Chloride	0.290	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889311	Ammonia-N	1.40	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889403	Kjeldahl Nitrogen	2.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889322	NO2NO3-N	0.541	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889383	Total-P	0.116	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889171	O-Phosphate-P	0.712	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P323416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888994	Sucralose	1.96	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P323441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889310	Color (true)	6.69	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P324011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889036	Total Alkalinity	0.750	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P323872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889257	TDS	3.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P324405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889317	Fluoride	1.07	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P323472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889178	Organic Carbon	0.956	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P323392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888781	2,4-D	2.50	Spike	P	0 - 30
1888781	Acetaminophen	17.5	Spike	P	0 - 30
1888781	Bentazon	3.17	Spike	P	0 - 30
1888781	Carbamazepine	10.9	Spike	P	0 - 30
1888781	Diuron	9.23	Spike	P	0 - 30
1888781	Fenuron	1.92	Spike	P	0 - 30
1888781	Imidacloprid	6.90	Spike	P	0 - 30
1888781	Linuron	30.0	Spike	F	0 - 30
1888781	MCP	10.8	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P323392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888781	Primidone	7.89	Spike	P	0 - 30
1888781	Triclopyr	14.0	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: 1889389
Field Sample ID: G2SW0022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	131	P	40 - 150
USGS O-2060-01	2,4-D-d3	99.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	75.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	88.0	P	40 - 160
USGS O-2060-01	Diuron-d6	47.0	P	30 - 150
USGS O-2060-01	Primidone-d5	68.8	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75792
Included Lab Sample IDs: 1889383

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

Reference Method: SM 2120 B
Run ID: A75794
Included Lab Sample IDs: 1889382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	98.4	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75795
Included Lab Sample IDs: 1889384

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	96.2	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A75803
Included Lab Sample IDs: 1889383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A75811
Included Lab Sample IDs: 1889389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	112	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75823
Included Lab Sample IDs: 1889382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A75884
Included Lab Sample IDs: 1889383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A75896
Included Lab Sample IDs: 1889383

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A75902
Included Lab Sample IDs: 1889383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A75903
Included Lab Sample IDs: 1889382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	102	108	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A75985
Included Lab Sample IDs: 1889389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.6	90.0	P/P	50 - 150
Bentazon	79.0	78.2	P/P	50 - 150
MCP	103	104	P/P	50 - 150
Triclopyr	80.6	76.8	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A75995
 Included Lab Sample IDs: 1889382

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

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A75999
 Included Lab Sample IDs: 1889382

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

Reference Method: USGS O-2060-01
 Run ID: A76024
 Included Lab Sample IDs: 1889389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	132	142	P/P	60 - 150
Carbamazepine	128	139	P/P	60 - 150
Diuron	113	131	P/P	60 - 150
Fenuron	121	130	P/P	60 - 150
Fluridone	141	140	P/P	60 - 150
Imidacloprid	108	112	P/P	60 - 150
Linuron	62.8	64.4	P/P	60 - 150
Primidone	96.8	94.4	P/P	60 - 150

Reference Method: SM 4500 F-C-97
 Run ID: A76126
 Included Lab Sample IDs: 1889382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	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				2.74	
EPA 300.0 Rev. 2.1	Chloride	102	101	100	0.290	
	Sulfate	107	107	108	0.0628	
EPA 350.1 Rev. 2.0	Ammonia-N	104	103	102		1.40
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.4	90.0	92.9		2.54
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	102	102		0.541
EPA 365.1 Rev. 2.0	Total-P	103	102	102		0.116
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	98.0	98.7		0.712
EPA 8321B	Sucralose	115	103	101		1.96
SM 2120 B	Color (true)				6.69	
SM 2320 B-97	Total Alkalinity	102			0.750	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
					LCS	
SM 2540 C-97	TDS				3.77	
SM 4500 F-C-97	Fluoride	96.7	100	101		1.07
SM 5310 B-00	Organic Carbon	98.8	104	102		0.956
USGS O-2060-01	2,4-D	83.2	131	127		2.50
	Acetaminophen	76.8	79.6	66.8		17.5
	Bentazon	134				3.17
	Carbamazepine	97.2	47.2	52.8		10.9
	Diuron	81.2	40.8	37.2		9.23
	Fenuron	87.6	42.0	41.2		1.92
	Fluridone	103				
	Imidacloprid	67.6	67.3	72.9		6.90
	Linuron	52.8	24.8	33.6		30.0
	MCP	98.0	137	123		10.8
	Primidone	61.2	53.6	58.0		7.89
	Triclopyr	100	106	74.8		14.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1889382
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1889382
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1889382
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1889383
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1889383
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1889383
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1889383
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1889384
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1889389
SM 2120 B / E31780	True Color measured at 450 nm	1889382
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1889382
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1889382
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1889382
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1889382
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1889383
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1889389
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1889389

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	04/14/2017			04/14/2017 16:52	Blanca Fach	1889382
EPA 300.0 Rev. 2.1	04/14/2017			04/21/2017	Ping Hua	1889382
	04/14/2017			04/27/2017	Ping Hua	1889382
EPA 350.1 Rev. 2.0	04/14/2017			04/14/2017	Julie Michelle Frank	1889383
EPA 351.2 Rev. 2.0	04/14/2017	04/19/2017	Adrian Shelby	04/20/2017	Joseph Suarez	1889383
EPA 353.2 Rev. 2.0	04/14/2017			04/20/2017	Beverly Y. Sanders	1889383
EPA 365.1 Rev. 2.0	04/14/2017	04/18/2017	Adrian Shelby	04/19/2017	Lipi Saha	1889383
EPA 365.1 Rev. 2.0 dissolved	04/14/2017			04/14/2017 15:57	Anthony C. Onicha	1889384
EPA 8321B	04/14/2017	04/16/2017	Mohammad Ghaffari	04/17/2017	Mohammad Ghaffari	1889389
SM 2120 B	04/14/2017			04/14/2017 16:10	Julia Storbeck	1889382
SM 2320 B-97	04/14/2017			04/26/2017	Dale L. Simmons	1889382
SM 2540 C-97	04/14/2017			04/19/2017	Yijie Li	1889382
SM 2540 D-97	04/14/2017			04/19/2017	Yijie Li	1889382
SM 4500 F-C-97	04/14/2017			05/02/2017	Dale L. Simmons	1889382
SM 5310 B-00	04/14/2017			04/15/2017	Julie Michelle Frank	1889383
USGS O-2060-01	04/14/2017	04/16/2017	Hoor Shaik	04/24/2017	Juyoung Kim	1889389
	04/14/2017	04/16/2017	Hoor Shaik	04/26/2017	Juyoung Kim	1889389