

Chemical Analysis Report

WQAP-2017-06-06-09

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

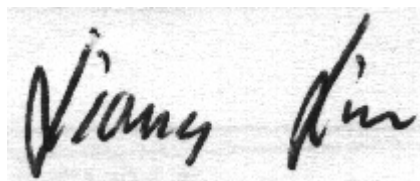
Event Description: **RUNS 13 & 14**
Request ID: **RQ-2017-06-05-35**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Attn: Judy Ashton

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 03-JUL-2017 09:50

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Mill Creek

Collection Date/Time: 06/05/2017 10:25

Field ID: G2SW0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903871	EPA 8321B	Sucralose**	0.12		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.11		ug/L	P326401	
		Diuron	0.0074		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.078		ug/L	P326401	MS
		Bentazon	8.0E-04	U	ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	7.2E-04	I	ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	4.0E-04	U	ug/L	P326401	

Ref. Method and Comment:
USGS O-2060-01: Results confirmed in re-extraction.

Sample Location: Delany Creek 1

Collection Date/Time: 06/05/2017 11:35

Field ID: G1SW0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903859	EPA 180.1 Rev. 2.0	Turbidity	21		NTU	P326366	
	EPA 300.0 Rev. 2.1	Chloride	5.9E+03		mg Cl/L	P326947	
		Sulfate	840		mg SO4/L	P326951	
	SM 2120 B	Color (true)	87	A	PCU	P326306	
	SM 2320 B-97	Total Alkalinity	201		mg CaCO3/L	P326654	
	SM 2540 C-97	TDS	1.12E+04		mg/L	P326798	
	SM 2540 D-97	TSS	20		mg/L	P327029	
	SM 4500 F-C-97	Fluoride	0.63		mg F/L	P326656	
1903860	EPA 350.1 Rev. 2.0	Ammonia-N	0.79		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P326427	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P326623	
	EPA 365.1 Rev. 2.0	Total-P	1.9		mg P/L	P326433	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P326507	
1903861	EPA 365.1 Rev. 2.0	O-Phosphate-P	1.5		mg P/L	P326312	
	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: Delany Creek 1

Collection Date/Time: 06/05/2017 11:35

Field ID: G1SW0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903872	EPA 8321B	Sucralose**	0.41		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.0046		ug/L	P326401	
		Diuron	0.024		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	

Field ID: G1SW0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903872	USGS O-2060-01	Imidacloprid	0.0098		ug/L	P326401	MS
		Bentazon	8.0E-04	U	ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.0019		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	0.0021		ug/L	P326401	

Sample Location: Delany Creek 2

Collection Date/Time: 06/05/2017 11:50

Field ID: G1SW0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903873	EPA 8321B	Sucralose**	0.29		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.0060		ug/L	P326401	
		Diuron	0.013		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.026		ug/L	P326401	MS
		Bentazon	8.0E-04	U	ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.0017		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	0.0013	I	ug/L	P326401	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P326366

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P326947

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P326951

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326433

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

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

Reference Method: EPA 8321B
Batch ID: P326278

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P326306

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 2540 C-97
Batch ID: P326798

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P327029

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Reference Method: USGS O-2060-01
Batch ID: P326401

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	0.0040	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 300.0 Rev. 2.1
Batch ID: P326947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

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: P326433

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P326278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	88.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.0		P	40 - 140
Acetaminophen	50.0		P	40 - 140
Bentazon	78.6		P	40 - 140
Carbamazepine	139		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	139		P	40 - 140
Fenuron	115		P	40 - 140
Fluridone	138		P	40 - 140
Imidacloprid	120		P	40 - 160
Linuron	124		P	40 - 140
MCPP	98.2		P	40 - 140
Primidone	132		P	40 - 140
Triclopyr	103		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903758	Chloride	103		P	90 - 110
1903964	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903758	Sulfate	102		P	90 - 110
1903964	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904112	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903804	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903881	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903891	Total-P	99.7	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P326312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903721	O-Phosphate-P	96.4	97.8	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P326278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903830	Sucralose	32.1	148	F/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P326656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904221	Fluoride	99.1	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P326507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903200	Organic Carbon	96.0	94.1	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P326401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903831	2,4-D	90.0	95.8	P/P	40 - 140
1903831	Acetaminophen	109	108	P/P	40 - 140
1903831	Bentazon	41.6	42.8	P/P	40 - 140
1903831	Carbamazepine	114	121	P/P	40 - 140
1903831	Diuron	102	105	P/P	40 - 140
1903831	Fenuron	80.0	78.0	P/P	40 - 140
1903831	Fluridone	100	103	P/P	40 - 140
1903831	Imidacloprid	205	204	F/F	40 - 160
1903831	Linuron	116	112	P/P	40 - 140
1903831	MCP	73.2	76.0	P/P	40 - 140
1903831	Primidone	120	128	P/P	40 - 140
1903831	Triclopyr	76.0	74.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903754	Turbidity	2.05	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903758	Chloride	0.577	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903758	Sulfate	1.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904112	Ammonia-N	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903804	Kjeldahl Nitrogen	0.655	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903881	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903891	Total-P	1.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903721	O-Phosphate-P	0.751	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P326278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903830	Sucralose	64.8	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P326306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903859	Color (true)	7.44	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P326654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Total Alkalinity	0.00963	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P326798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904308	TDS	3.47	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P326656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P326507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903200	Organic Carbon	1.85	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P326401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903831	2,4-D	5.05	Spike	P	0 - 30
1903831	Acetaminophen	0.369	Spike	P	0 - 30
1903831	Bentazon	1.77	Spike	P	0 - 30
1903831	Carbamazepine	5.01	Spike	P	0 - 30
1903831	Diuron	2.25	Spike	P	0 - 30
1903831	Fenuron	2.53	Spike	P	0 - 30
1903831	Fluridone	2.35	Spike	P	0 - 30
1903831	Imidacloprid	0.471	Spike	P	0 - 30
1903831	Linuron	4.21	Spike	P	0 - 30
1903831	MCP	3.75	Spike	P	0 - 30
1903831	Primidone	6.79	Spike	P	0 - 30
1903831	Triclopyr	1.59	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: 1903871
 Field Sample ID: G2SW0022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	71.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	88.7	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	118	P	30 - 160
USGS O-2060-01	Diuron-d6	95.8	P	30 - 160
USGS O-2060-01	Primidone-d5	138	P	30 - 150

Lab Sample ID: 1903872
 Field Sample ID: G1SW0046

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	72.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	86.7	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	118	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	84.4	P	30 - 160
USGS O-2060-01	Diuron-d6	58.3	P	30 - 160
USGS O-2060-01	Primidone-d5	108	P	30 - 150

Lab Sample ID: 1903873
 Field Sample ID: G1SW0066

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	119	P	40 - 160
USGS O-2060-01	2,4-D-d3	78.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	102	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	79.1	P	30 - 160
USGS O-2060-01	Diuron-d6	51.0	P	30 - 160
USGS O-2060-01	Primidone-d5	101	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
 Run ID: A76897
 Included Lab Sample IDs: 1903859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	95.2	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A76901
 Included Lab Sample IDs: 1903861

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

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A76922
 Included Lab Sample IDs: 1903859

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76922

Included Lab Sample IDs: 1903859

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76933

Included Lab Sample IDs: 1903860

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

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1903871, 1903872, 1903873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	110	P/P	50 - 150
Acetaminophen	110	90.0	P/P	60 - 150
Bentazon	116	112	P/P	50 - 150
Carbamazepine	113	110	P/P	60 - 150
Diuron	110	102	P/P	60 - 150
Fenuron	100	93.6	P/P	60 - 150
Fluridone	128	113	P/P	60 - 160
Imidacloprid	111	98.4	P/P	60 - 150
Linuron	108	104	P/P	60 - 150
MCPP	98.4	91.2	P/P	50 - 150
Primidone	110	110	P/P	60 - 150
Triclopyr	101	98.8	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A76978

Included Lab Sample IDs: 1903860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76980

Included Lab Sample IDs: 1903860

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77011

Included Lab Sample IDs: 1903860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77012

Included Lab Sample IDs: 1903860

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

Reference Method: SM 2320 B-97

Run ID: A77029

Included Lab Sample IDs: 1903859

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

Reference Method: SM 4500 F-C-97

Run ID: A77029

Included Lab Sample IDs: 1903859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77076

Included Lab Sample IDs: 1903859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	100	P/P	90 - 110
Sulfate	105	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A77276

Included Lab Sample IDs: 1903871, 1903872, 1903873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	78.8	112	P/P	60 - 160

* 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				2.05	
EPA 300.0 Rev. 2.1	Chloride	97.4	103	102	0.577	
	Sulfate	98.3	102	97.7	1.59	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	103	101		1.64
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	103	104		0.655
EPA 353.2 Rev. 2.0	NO2NO3-N	103	104	104		0.0
EPA 365.1 Rev. 2.0	Total-P	100	99.7	97.8		1.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	96.4	97.8		0.751
EPA 8321B	Sucralose	88.2	32.1	148		64.8
SM 2120 B	Color (true)				7.44	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2320 B-97	Total Alkalinity	103				0.0096	
SM 2540 C-97	TDS					3.47	
SM 4500 F-C-97	Fluoride	96.5	99.1	99.1			0.0
SM 5310 B-00	Organic Carbon	101	96.0	94.1			1.85
USGS O-2060-01	2,4-D	94.0	90.0	95.8			5.05
	Acetaminophen	50.0	109	108			0.369
	Bentazon	78.6	41.6	42.8			1.77
	Carbamazepine	139	114	121			5.01
	Diuron	139	102	105			2.25
	Fenuron	115	80.0	78.0			2.53
	Fluridone	138	100	103			2.35
	Imidacloprid	120	205	204			0.471
	Linuron	124	116	112			4.21
	MCPP	98.2	73.2	76.0			3.75
	Primidone	132	120	128			6.79
	Triclopyr	103	76.0	74.8			1.59

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1903859
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1903859
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1903859
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1903860
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1903860
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1903860
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1903860
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1903861
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1903871, 1903872, 1903873
SM 2120 B / E31780	True Color measured at 450 nm	1903859
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1903859
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1903859
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1903859
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1903859
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1903860
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1903871, 1903872, 1903873
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1903871, 1903872, 1903873

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	06/06/2017			06/06/2017 17:41	Blanca Fach	1903859
EPA 300.0 Rev. 2.1	06/06/2017			06/16/2017	Julia Storbeck	1903859
EPA 350.1 Rev. 2.0	06/06/2017			06/07/2017	Julie Michelle Frank	1903860
EPA 351.2 Rev. 2.0	06/06/2017	06/08/2017	Adrian Shelby	06/12/2017	Joseph Suarez	1903860
EPA 353.2 Rev. 2.0	06/06/2017			06/12/2017	Beverly Y. Sanders	1903860
EPA 365.1 Rev. 2.0	06/06/2017	06/08/2017	Adrian Shelby	06/09/2017	Lipi Saha	1903860
EPA 365.1 Rev. 2.0 dissolved	06/06/2017			06/06/2017 16:34	Anthony C. Onicha	1903861
EPA 8321B	06/06/2017	06/15/2017	Mohammad Ghaffari	06/20/2017	Mohammad Ghaffari	1903871, 1903872, 1903873
SM 2120 B	06/06/2017			06/06/2017 18:10	Tanya Welborn	1903859
SM 2320 B-97	06/06/2017			06/12/2017	Dale L. Simmons	1903859
SM 2540 C-97	06/06/2017			06/09/2017	Yijie Li	1903859
SM 2540 D-97	06/06/2017			06/09/2017	Yijie Li	1903859
SM 4500 F-C-97	06/06/2017			06/12/2017	Dale L. Simmons	1903859
SM 5310 B-00	06/06/2017			06/08/2017	Christopher Armour	1903860
USGS O-2060-01	06/06/2017	06/08/2017	Hoor Shaik	06/09/2017	Mohammad Ghaffari	1903871, 1903872, 1903873