

Chemical Analysis Report

CEN-DIST-2017-09-01-01

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

Event Description: **Ocklawaha Riv Ab Daisy Crk + HA₂**
Request ID: **RQ-2017-08-28-29**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-SEP-2017 14:05

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: Ocklawaha River @ 270m Upstream of Silver River **Collection Date/Time: 08/31/2017 12:00**

Field ID: G1CE0062

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1927029	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P331209	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P331692	
		Sulfate	60		mg SO4/L	P331691	
	SM 2120 B	Color (true)	570		PCU	P331212	
	SM 2320 B-97	Total Alkalinity	72		mg CaCO3/L	P331537	
	SM 2540 C-97	TDS	348	A	mg/L	P331549	
	SM 2540 D-97	TSS	4	IA	mg/L	P331580	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P331540	
1927030	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P331460	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P331216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P331315	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P331258	
	SM 5310 B-00	Organic Carbon	63		mg C/L	P331407	
1927031	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P331206	
1927063	EPA 8321B	Sucralose**	0.020	U	ug/L	P331186	MS, RPD
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P331187	
		Diuron	8.0E-04	U	ug/L	P331187	
		Fenuron	0.0080	U	ug/L	P331187	
		Imidacloprid	8.0E-04	U	ug/L	P331187	MS
		Bentazon	8.0E-04	U	ug/L	P331187	MS
		Linuron	0.0040	U	ug/L	P331187	
		Acetaminophen**	0.0080	U	ug/L	P331187	
		MCP	0.0020	U	ug/L	P331187	
		Carbamazepine**	4.0E-04	U	ug/L	P331187	
		Triclopyr**	0.0040	U	ug/L	P331187	
		Primidone**	0.0040	U	ug/L	P331187	
		Fluridone**	0.0012	I	ug/L	P331187	

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 EPA 8321B: MDL elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331209

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331691

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331692

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331460

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331216

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331315

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331258

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331206

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

Reference Method: EPA 8321B
Batch ID: P331186

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P331212

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P331537

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P331549

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P331580

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P331540

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P331407

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

Reference Method: USGS O-2060-01
Batch ID: P331187

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	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
MCPD	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: P331691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331692

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.7		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331216

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P331186

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P331537

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

Reference Method: SM 4500 F-C-97
Batch ID: P331540

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P331407

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P331187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	53.0		P	40 - 150
Acetaminophen	134		P	30 - 150
Bentazon	41.4		P	40 - 150
Carbamazepine	124		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	68.5		P	40 - 150
Imidacloprid	94.9		P	40 - 160
Linuron	86.9		P	40 - 150
MCPP	52.9		P	40 - 150
Primidone	111		P	40 - 150
Triclopyr	54.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927007	Sulfate	95.3		P	90 - 110
1927008	Sulfate	94.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927007	Chloride	95.6		P	90 - 110
1927008	Chloride	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927003	Ammonia-N	100	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926995	Kjeldahl Nitrogen	94.8	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926995	NO2NO3-N	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P331258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927003	Total-P	92.6	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P331206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927004	O-Phosphate-P	95.7	96.1	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P331186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927171	Sucralose	34.7	9.82	F/F	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P331540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927007	Fluoride	98.3	98.3	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P331407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926883	Organic Carbon	95.9	97.9	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P331187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927171	2,4-D	58.1	60.9	P/P	40 - 150
1927171	Acetaminophen	64.5	63.0	P/P	30 - 150
1927171	Bentazon	30.9	29.1	F/F	40 - 150
1927171	Carbamazepine	100	98.5	P/P	40 - 150
1927171	Diuron	80.4	79.7	P/P	40 - 150
1927171	Fenuron	89.9	91.9	P/P	40 - 150
1927171	Fluridone	54.5	54.6	P/P	40 - 150
1927171	Imidacloprid	228	228	F/F	40 - 160
1927171	Linuron	95.7	94.0	P/P	40 - 150
1927171	MCP	51.0	51.3	P/P	40 - 150
1927171	Primidone	111	107	P/P	40 - 150
1927171	Triclopyr	48.6	50.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P331209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927007	Turbidity	0.727	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927008	Sulfate	0.668	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927008	Chloride	0.0843	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927003	Ammonia-N	2.58	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926995	Kjeldahl Nitrogen	0.718	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926995	NO2NO3-N	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927003	Total-P	1.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927004	O-Phosphate-P	0.385	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P331186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927171	Sucralose	39.6	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P331212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927082	Color (true)	1.58	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P331537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927007	Total Alkalinity	0.221	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P331549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927029	TDS	4.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P331540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927007	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P331407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926883	Organic Carbon	1.70	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P331187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927171	2,4-D	3.87	Spike	P	0 - 30
1927171	Acetaminophen	2.42	Spike	P	0 - 30
1927171	Bentazon	5.87	Spike	P	0 - 30
1927171	Carbamazepine	1.73	Spike	P	0 - 30
1927171	Diuron	0.775	Spike	P	0 - 30
1927171	Fenuron	2.22	Spike	P	0 - 30
1927171	Fluridone	0.257	Spike	P	0 - 30
1927171	Imidacloprid	0.0876	Spike	P	0 - 30
1927171	Linuron	1.86	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P331187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927171	MCP	0.743	Spike	P	0 - 30
1927171	Primidone	3.77	Spike	P	0 - 30
1927171	Triclopyr	4.03	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: 1927063
Field Sample ID: G1CE0062

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	71.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.0	P	30 - 160
EPA 8321B	Diuron-d6	54.8	P	30 - 160
EPA 8321B	Primidone-d5	83.3	P	30 - 160
EPA 8321B	Sucralose-d6	45.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	60.5	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	71.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	68.0	P	30 - 160
USGS O-2060-01	Diuron-d6	54.8	P	30 - 160
USGS O-2060-01	Primidone-d5	83.3	P	30 - 160
USGS O-2060-01	Sucralose-d6	45.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A78758
Included Lab Sample IDs: 1927031

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A78760
Included Lab Sample IDs: 1927029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A78761
Included Lab Sample IDs: 1927029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.9	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78790

Included Lab Sample IDs: 1927030

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78799

Included Lab Sample IDs: 1927030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78817

Included Lab Sample IDs: 1927030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.7	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78834

Included Lab Sample IDs: 1927030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78858

Included Lab Sample IDs: 1927030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	97.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A78859

Included Lab Sample IDs: 1927063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	97.4	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A78874

Included Lab Sample IDs: 1927029

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

Reference Method: SM 4500 F-C-97

Run ID: A78874

Included Lab Sample IDs: 1927029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A78940

Included Lab Sample IDs: 1927029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	95.2	P/P	90 - 110
Sulfate	97.1	95.2	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A79030

Included Lab Sample IDs: 1927063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.8	92.3	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 150
Bentazon	96.8	100	P/P	50 - 150
Carbamazepine	117	116	P/P	60 - 150
Diuron	103	98.8	P/P	60 - 150
Fenuron	101	100	P/P	60 - 150
Fluridone	102	102	P/P	60 - 160
Imidacloprid	96.9	95.1	P/P	60 - 150
Linuron	100	91.6	P/P	60 - 150
MCP	88.5	91.6	P/P	50 - 150
Primidone	94.6	97.7	P/P	60 - 150
Triclopyr	92.6	101	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.727	
EPA 300.0 Rev. 2.1	Chloride	99.7	94.0	95.6		0.0843	
	Sulfate	98.7	94.6	95.3		0.668	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	100	96.5			2.58
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	94.8	95.7			0.718
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.5	102				1.16
EPA 365.1 Rev. 2.0	Total-P	96.2	92.6	93.8			1.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	95.7	96.1			0.385
EPA 8321B	Sucralose	96.6	34.7	9.82			39.6
SM 2120 B	Color (true)					1.58	
SM 2320 B-97	Total Alkalinity	103				0.221	
SM 2540 C-97	TDS					4.02	
SM 4500 F-C-97	Fluoride	99.3	98.3	98.3			0.0
SM 5310 B-00	Organic Carbon	98.0	95.9	97.9			1.70
USGS O-2060-01	2,4-D	53.0	58.1	60.9			3.87
	Acetaminophen	134	64.5	63.0			2.42
	Bentazon	41.4	30.9	29.1			5.87
	Carbamazepine	124	100	98.5			1.73
	Diuron	103	80.4	79.7			0.775
	Fenuron	114	89.9	91.9			2.22

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
USGS O-2060-01	Fluridone	68.5	54.5	54.6		0.257
	Imidacloprid	94.9	228	228		0.0876
	Linuron	86.9	95.7	94.0		1.86
	MCP	52.9	51.0	51.3		0.743
	Primidone	111	111	107		3.77
	Triclopyr	54.0	48.6	50.6		4.03

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1927029
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1927029
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1927029
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1927030
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1927030
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1927030
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1927030
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1927031
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1927063
SM 2120 B / E31780	True Color measured at 450 nm	1927029
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1927029
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1927029
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1927029
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1927029
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1927030
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1927063
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1927063

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	09/01/2017			09/01/2017 16:50	Tanya Welborn	1927029
EPA 300.0 Rev. 2.1	09/01/2017			09/15/2017	Julia Storbeck	1927029
EPA 350.1 Rev. 2.0	09/01/2017			09/06/2017	Sofia Elnemr	1927030
EPA 351.2 Rev. 2.0	09/01/2017	09/05/2017	Adrian Shelby	09/06/2017	Joseph Suarez	1927030
EPA 353.2 Rev. 2.0	09/01/2017			09/06/2017	Beverly Y. Sanders	1927030
EPA 365.1 Rev. 2.0	09/01/2017	09/05/2017	Sima Feizi	09/06/2017	Lipi Saha	1927030
EPA 365.1 Rev. 2.0 dissolved	09/01/2017			09/01/2017 14:53	Megan Treadwell	1927031
EPA 8321B	09/01/2017	09/06/2017	Hoor Shaik	09/07/2017	Julie Michelle Frank	1927063
SM 2120 B	09/01/2017			09/01/2017 16:03	Tanya Welborn	1927029
SM 2320 B-97	09/01/2017			09/08/2017	Dale L. Simmons	1927029
SM 2540 C-97	09/01/2017			09/06/2017	Yijie Li	1927029
SM 2540 D-97	09/01/2017			09/06/2017	Yijie Li	1927029
SM 4500 F-C-97	09/01/2017			09/08/2017	Dale L. Simmr	1927029
SM 5310 B-00	09/01/2017			09/07/2017	Ping Hua	1927030
USGS O-2060-01	09/01/2017	09/06/2017	Hoor Shaik	09/19/2017	Julie Michelle Frank	1927063