

Chemical Analysis Report

CEN-DIST-2018-02-02-01

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

Event Description: **Little Wekiva (west) X2**
Request ID: **RQ-2018-01-29-55**
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: Colin Wright, Program Administrator

Date Certified: 26-FEB-2018 15:31

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue 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: LITTLE WEKIVA (WEST) @ 50M US OF NORTHWESTERN AVE

Collection Date/Time: 02/01/2018 11:24

Field ID: G2CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963894	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P339261	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P339698	
		Sulfate	13		mg SO4/L	P339703	
	SM 2120 B	Color (true)	48	A	PCU	P339256	
	SM 2320 B-97	Total Alkalinity	63		mg CaCO3/L	P339612	
	SM 2540 C-97	TDS	142		mg/L	P339744	
	SM 2540 D-97	TSS	6	I	mg/L	P339683	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P339615	
1963895	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P339373	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P339272	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P339334	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P339341	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P340070	
1963896	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P339312	
1963931	EPA 8321B	2,4-D	0.36		ug/L	P339218	
		Sucralose**	1.4		ug/L	P339296	
		Bentazon	0.062		ug/L	P339218	
		MCP	0.0020	U	ug/L	P339218	
		Triclopyr**	0.0040	U	ug/L	P339218	
		Imidacloprid	0.0044	I	ug/L	P339218	
		Diuron	0.0041	I	ug/L	P339218	
		Primidone**	0.0069	I	ug/L	P339218	
		Linuron	0.0040	U	ug/L	P339218	
		Acetaminophen**	0.0080	U	ug/L	P339218	
		Fenuron	0.0080	U	ug/L	P339218	
		Carbamazepine**	0.0035		ug/L	P339218	
		Fluridone**	0.10		ug/L	P339218	

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: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LITTLE WEKIVA (WEST) @ 150M EAST OF NORTHWESTERN AVE

Collection Date/Time: 02/01/2018 11:40

Field ID: G2CE0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963932	EPA 8321B	2,4-D	0.42		ug/L	P339218	
		Sucralose**	1.3		ug/L	P339296	
		Bentazon	0.068		ug/L	P339218	
		MCP	0.0020	U	ug/L	P339218	
		Triclopyr**	0.0040	U	ug/L	P339218	
		Imidacloprid	0.0039	I	ug/L	P339218	
		Diuron	0.0042	I	ug/L	P339218	
		Primidone**	0.0069	I	ug/L	P339218	

Field ID: G2CE0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963932	EPA 8321B	Linuron	0.0040	U	ug/L	P339218	
		Acetaminophen**	0.0080	U	ug/L	P339218	
		Fenuron	0.0080	U	ug/L	P339218	
		Carbamazepine**	0.0041		ug/L	P339218	
		Fluridone**	0.12		ug/L	P339218	

Ref. Method and Comment:
 EPA 8321B: MS accuracy for 2,4-D 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: P339261

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P339698

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P339703

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P339373

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P339272

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P339334

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P339341

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339312

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

Reference Method: EPA 8321B
Batch ID: P339218

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	8.0E-04	U	ug/L
Imidacloprid	0.0020	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

Reference Method: EPA 8321B
Batch ID: P339296

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P339256

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P339612

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

Reference Method: SM 2540 C-97
Batch ID: P339744

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339683

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P339615

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P340070

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339373

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339334

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339341

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P339312

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

Reference Method: EPA 8321B
 Batch ID: P339218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.2		P	40 - 150
Acetaminophen	109		P	30 - 150
Bentazon	84.2		P	30 - 150
Carbamazepine	94.0		P	40 - 150
Diuron	86.8		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	86.2		P	40 - 150
Imidacloprid	95.2		P	40 - 160
Linuron	89.5		P	40 - 150
MCP	81.1		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	73.8		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P339296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P339612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.4		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P339615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.5		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P340070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P339698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963940	Chloride	96.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963947	Chloride	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963940	Sulfate	94.2		P	90 - 110
1963947	Sulfate	95.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963895	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963850	Kjeldahl Nitrogen	96.4	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963841	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963895	Total-P	98.3	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963852	O-Phosphate-P	94.9	96.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963931	Acetaminophen	134	126	P/P	30 - 150
1963931	Bentazon	68.5	57.0	P/P	30 - 150
1963931	Carbamazepine	93.4	90.7	P/P	40 - 150
1963931	Diuron	84.6	77.4	P/P	40 - 150
1963931	Fenuron	98.1	88.2	P/P	40 - 150
1963931	Fluridone	71.6	66.0	P/P	40 - 150
1963931	Imidacloprid	149	153	P/P	40 - 160
1963931	Linuron	85.7	87.7	P/P	40 - 150
1963931	MCP	64.2	59.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P339218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963931	Primidone	127	113	P/P	40 - 150
1963931	Triclopyr	64.7	52.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963387	Sucralose	116	112	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P339615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963898	Fluoride	94.2	91.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P340070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963861	Organic Carbon	97.8	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963865	Turbidity	0.531	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963947	Chloride	2.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963947	Sulfate	1.68	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963895	Ammonia-N	1.14	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963850	Kjeldahl Nitrogen	2.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963841	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963895	Total-P	2.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963852	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P339218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963931	2,4-D	21.5	Spike	P	0 - 30
1963931	Acetaminophen	5.63	Spike	P	0 - 30
1963931	Bentazon	8.15	Spike	P	0 - 30
1963931	Carbamazepine	2.87	Spike	P	0 - 30
1963931	Diuron	8.34	Spike	P	0 - 30
1963931	Fenuron	10.6	Spike	P	0 - 30
1963931	Fluridone	2.79	Spike	P	0 - 30
1963931	Imidacloprid	2.65	Spike	P	0 - 30
1963931	Linuron	2.27	Spike	P	0 - 30
1963931	MCPP	7.72	Spike	P	0 - 30
1963931	Primidone	11.2	Spike	P	0 - 30
1963931	Triclopyr	20.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963387	Sucralose	3.87	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P339256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963894	Color (true)	0.755	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P339612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963898	Total Alkalinity	0.0876	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963867	TDS	4.18	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P339615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963898	Fluoride	1.94	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P340070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963861	Organic Carbon	0.359	Spike	P	0 - 20

* 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: 1963931
Field Sample ID: G2CE0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.0	P	30 - 160
EPA 8321B	Diuron-d6	86.2	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1963932
Field Sample ID: G2CE0174

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	138	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.3	P	30 - 160
EPA 8321B	Diuron-d6	95.6	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A81826
Included Lab Sample IDs: 1963894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	109	105	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81829
Included Lab Sample IDs: 1963894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81844
Included Lab Sample IDs: 1963896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A81855
Included Lab Sample IDs: 1963895

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A81866
Included Lab Sample IDs: 1963895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81870
Included Lab Sample IDs: 1963895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81871

Included Lab Sample IDs: 1963895

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

Reference Method: EPA 8321B

Run ID: A81928

Included Lab Sample IDs: 1963931, 1963932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	109	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A81946

Included Lab Sample IDs: 1963894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	95.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81946

Included Lab Sample IDs: 1963894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	109	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81969

Included Lab Sample IDs: 1963894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	101	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A82106

Included Lab Sample IDs: 1963895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82192

Included Lab Sample IDs: 1963931, 1963932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	81.1	95.4	P/P	50 - 150
Acetaminophen	131	106	P/P	60 - 150
Bentazon	115	108	P/P	50 - 150
Carbamazepine	123	110	P/P	60 - 150
Diuron	123	117	P/P	60 - 150
Fenuron	122	114	P/P	60 - 150
Fluridone	109	105	P/P	60 - 160
Imidacloprid	112	99.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A82192

Included Lab Sample IDs: 1963931, 1963932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	129	129	P/P	60 - 150
MCP	102	97.4	P/P	50 - 150
Primidone	105	108	P/P	60 - 150
Triclopyr	92.8	90.8	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				0.531	
EPA 300.0 Rev. 2.1	Chloride	94.1	96.3 96.0		2.83	
	Sulfate	92.2	95.5 94.2		1.68	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101 103			1.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.4	96.4 98.3			2.00
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	98.4 98.4			0.0
EPA 365.1 Rev. 2.0	Total-P	99.2	98.3 102			2.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	94.2	94.9 96.1			1.07
EPA 8321B	2,4-D	71.2				21.5
	Acetaminophen	109	134 126			5.63
	Bentazon	84.2	68.5 57.0			8.15
	Carbamazepine	94.0	93.4 90.7			2.87
	Diuron	86.8	84.6 77.4			8.34
	Fenuron	115	98.1 88.2			10.6
	Fluridone	86.2	71.6 66.0			2.79
	Imidacloprid	95.2	149 153			2.65
	Linuron	89.5	85.7 87.7			2.27
	MCP	81.1	64.2 59.4			7.72
	Primidone	107	127 113			11.2
	Sucralose	105	116 112			3.87
	Triclopyr	73.8	64.7 52.8			20.2
SM 2120 B	Color (true)				0.755	
SM 2320 B-97	Total Alkalinity	97.4			0.0876	
SM 2540 C-97	TDS				4.18	
SM 4500 F-C-97	Fluoride	94.5	94.2 91.9			1.94
SM 5310 B-00	Organic Carbon	96.4	97.8 97.4			0.359

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1963894
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1963894
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1963894

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1963895
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1963895
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1963895
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1963895
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1963896
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1963931, 1963932
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1963931, 1963932
SM 2120 B / E31780	True Color measured at 450 nm	1963894
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1963894
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1963894
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1963894
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1963894
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1963895

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	02/02/2018			02/02/2018 14:20	Tanya Welborn	1963894
EPA 300.0 Rev. 2.1	02/02/2018			02/09/2018	Julia Storbeck	1963894
EPA 350.1 Rev. 2.0	02/02/2018			02/05/2018	Ping Hua	1963895
EPA 351.2 Rev. 2.0	02/02/2018	02/05/2018	Adrian Shelby	02/06/2018	Joseph Suarez	1963895
EPA 353.2 Rev. 2.0	02/02/2018			02/05/2018	Lauren Bottorf	1963895
EPA 365.1 Rev. 2.0	02/02/2018	02/05/2018	Sima Feizi	02/06/2018	Beverly Y. Sanders	1963895
EPA 365.1 Rev. 2.0 dissolved	02/02/2018			02/02/2018 15:40	Megan Treadwell	1963896
EPA 8321B	02/02/2018	02/06/2018	Juyoung Kim	02/07/2018	Juyoung Kim	1963931, 1963932
	02/02/2018	02/07/2018	Hoor Shaik	02/09/2018	Julie Michelle Frank	1963931, 1963932
SM 2120 B	02/02/2018			02/02/2018 15:57	Tanya Welborn	1963894
SM 2320 B-97	02/02/2018			02/08/2018	Lauren Bottorf	1963894
SM 2540 C-97	02/02/2018			02/07/2018	Yijie Li	1963894
SM 2540 D-97	02/02/2018			02/07/2018	Yijie Li	1963894
SM 4500 F-C-97	02/02/2018			02/08/2018	Lauren Bottorf	1963894
SM 5310 B-00	02/02/2018			02/14/2018	Megan Treadwell	1963895