

Chemical Analysis Report

NW-DIST-2017-04-26-01

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

Event Description: **CHOCT RIVER RUN WBID 49C,E 679**
Request ID: **RQ-2017-04-17-22**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-MAY-2017 15:12

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: Choctawhatchee River

Collection Date/Time: 04/25/2017 13:10

Field ID: G3NW0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892637	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P324093	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P324662	
		Sulfate	2.0		mg SO4/L	P324667	
	SM 2120 B	Color (true)	50	A	PCU	P324068	
	SM 2320 B-97	Total Alkalinity	49		mg CaCO3/L	P324822	
	SM 2540 C-97	TDS	82		mg/L	P324738	
	SM 2540 D-97	TSS	12		mg/L	P324782	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P325522	
1892639	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P324251	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P324153	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P324206	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P324199	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P324173	
1892641	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P324097	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Choctawhatchee River upstream Holmes Ck

Collection Date/Time: 04/25/2017 14:30

Field ID: G3NW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892638	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P324093	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P324662	
		Sulfate	2.2		mg SO4/L	P324667	
	SM 2120 B	Color (true)	69		PCU	P324068	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P324822	
	SM 2540 C-97	TDS	62		mg/L	P324738	
	SM 2540 D-97	TSS	10		mg/L	P324782	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P325523	
1892640	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P324251	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P324153	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P324206	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P324199	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P324173	
1892642	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P324097	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Black Creek

Collection Date/Time: 04/25/2017 12:15

Field ID: G3NW0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892664	EPA 8321B	Sucralose**	0.038	I	ug/L	P324034	

Field ID: G3NW0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1892664	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P324040	
		Diuron	8.0E-04	U	ug/L	P324040	
		Fenuron	0.0040	U	ug/L	P324040	
		Imidacloprid	0.0018	I	ug/L	P324040	MS
		Bentazon	8.0E-04	U	ug/L	P324040	
		Linuron	0.0040	U	ug/L	P324040	
		Acetaminophen**	0.0080	U	ug/L	P324040	
		MCPD	8.0E-04	U	ug/L	P324040	
		Carbamazepine**	4.0E-04	U	ug/L	P324040	
		Triclopyr**	0.0040	U	ug/L	P324040	
		Primidone**	0.0040	U	ug/L	P324040	
		Fluridone**	4.0E-04	U	ug/L	P324040	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P324093

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324662

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324667

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324251

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324153

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324206

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324199

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324097

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

Reference Method: EPA 8321B
Batch ID: P324034

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P324068

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P324822

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

Reference Method: SM 2540 C-97
Batch ID: P324738

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324782

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325522

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325523

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
 Batch ID: P324173

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

Reference Method: USGS O-2060-01
 Batch ID: P324040

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	8.0E-04	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: P324662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324153

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324206

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324199

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324097

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

Reference Method: EPA 8321B
Batch ID: P324034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	113		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P324822

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

Reference Method: SM 4500 F-C-97
Batch ID: P325522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324173

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

Reference Method: USGS O-2060-01
Batch ID: P324040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	73.9		P	40 - 140
Acetaminophen	83.4		P	40 - 140
Bentazon	48.0		P	40 - 140
Carbamazepine	109		P	40 - 140
Diuron	106		P	40 - 140
Fenuron	105		P	40 - 140
Fluridone	102		P	40 - 140
Imidacloprid	106		P	40 - 160
Linuron	98.6		P	40 - 140
MCP	79.2		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P324040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	105		P	40 - 140
Triclopyr	77.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892638	Chloride	96.9		P	90 - 110
1895503	Chloride	95.8	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892638	Sulfate	99.8		P	90 - 110
1895503	Sulfate	97.4	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892289	Ammonia-N	96.5	93.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892639	Kjeldahl Nitrogen	96.9	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892601	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892562	O-Phosphate-P	97.2	98.3	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P324034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892902	Sucralose	110	110	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P325522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892682	Fluoride	101	102	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892759	Fluoride	101	102	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892474	Organic Carbon	99.1	100	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P324040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1892542	2,4-D	62.4	66.3	P/P	40 - 140
1892542	Acetaminophen	81.8	101	P/P	40 - 140
1892542	Bentazon	47.2	49.4	P/P	40 - 140
1892542	Carbamazepine	89.2	90.7	P/P	40 - 140
1892542	Diuron	76.3	80.6	P/P	40 - 140
1892542	Fenuron	49.5	49.3	P/P	40 - 140
1892542	Fluridone	71.1	74.9	P/P	40 - 140
1892542	Imidacloprid	154	163	P/F	40 - 160
1892542	Linuron	91.2	94.6	P/P	40 - 140
1892542	MCP	56.8	61.2	P/P	40 - 140
1892542	Primidone	81.5	84.5	P/P	40 - 140
1892542	Triclopyr	60.1	63.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892553	Turbidity	1.60	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895503	Chloride	0.808	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895503	Sulfate	2.39	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892289	Ammonia-N	2.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892639	Kjeldahl Nitrogen	5.87	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892601	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892616	Total-P	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892562	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P324034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892902	Sucralose	0.0	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P324068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892637	Color (true)	6.14	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P324822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893634	Total Alkalinity	0.297	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P324738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892554	TDS	4.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P325522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892682	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
 Batch ID: P325523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892759	Fluoride	0.947	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P324173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892474	Organic Carbon	1.19	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P324040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1892542	2,4-D	5.43	Spike	P	0 - 30
1892542	Acetaminophen	20.6	Spike	P	0 - 30
1892542	Bentazon	4.29	Spike	P	0 - 30
1892542	Carbamazepine	1.73	Spike	P	0 - 30
1892542	Diuron	4.34	Spike	P	0 - 30
1892542	Fenuron	0.324	Spike	P	0 - 30
1892542	Fluridone	4.39	Spike	P	0 - 30
1892542	Imidacloprid	5.87	Spike	P	0 - 30
1892542	Linuron	3.66	Spike	P	0 - 30
1892542	MCP	7.46	Spike	P	0 - 30
1892542	Primidone	3.61	Spike	P	0 - 30
1892542	Triclopyr	4.68	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: 1892664
Field Sample ID: G3NW0131

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	102	P	40 - 150
USGS O-2060-01	2,4-D-d3	68.5	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	86.3	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	89.6	P	30 - 160
USGS O-2060-01	Diuron-d6	90.1	P	30 - 150
USGS O-2060-01	Primidone-d5	99.0	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76015
Included Lab Sample IDs: 1892637, 1892638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.8	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76020
Included Lab Sample IDs: 1892641, 1892642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.0	96.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76023
Included Lab Sample IDs: 1892637, 1892638

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

Reference Method: EPA 8321B
Run ID: A76043
Included Lab Sample IDs: 1892664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	131	109	P/P	60 - 150

Reference Method: SM 5310 B-00
Run ID: A76046
Included Lab Sample IDs: 1892639, 1892640

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A76056
Included Lab Sample IDs: 1892639, 1892640

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76070

Included Lab Sample IDs: 1892639, 1892640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	91.7	91.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76108

Included Lab Sample IDs: 1892639, 1892640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.1	P/P	90 - 110
Kjeldahl Nitrogen	96.1	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76120

Included Lab Sample IDs: 1892639, 1892640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	98.5	P/P	90 - 110
Total-P	98.5	96.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76148

Included Lab Sample IDs: 1892637, 1892638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Chloride	102	104	P/P	90 - 110
Sulfate	100	96.7	P/P	90 - 110
Sulfate	100	96.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76242

Included Lab Sample IDs: 1892637, 1892638

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

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1892664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.2	89.2	P/P	50 - 150
Acetaminophen	110	96.4	P/P	60 - 150
Bentazon	84.4	81.2	P/P	50 - 150
Carbamazepine	108	99.2	P/P	60 - 150
Diuron	116	121	P/P	60 - 150
Fenuron	102	102	P/P	60 - 150
Fluridone	118	112	P/P	60 - 150
Imidacloprid	109	105	P/P	60 - 150
Linuron	104	96.8	P/P	60 - 150
MCPP	94.4	90.0	P/P	50 - 150
Primidone	106	94.0	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1892664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	97.2	90.0	P/P	50 - 150

Reference Method: SM 4500 F-C-97

Run ID: A76528

Included Lab Sample IDs: 1892637, 1892638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	103	P/P	90 - 110
Fluoride	96.2	103	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						1.60	
EPA 300.0 Rev. 2.1	Chloride	97.6	95.8	96.8	96.9			0.808
	Sulfate	97.9	97.4	100	99.8			2.39
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	96.5	93.5				2.84
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	96.9	104				5.87
EPA 353.2 Rev. 2.0	NO2NO3-N	106	102	102				0.0
EPA 365.1 Rev. 2.0	Total-P	101						0.494
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	97.2	98.3				1.13
EPA 8321B	Sucralose	113	110	110				0.0
SM 2120 B	Color (true)						6.14	
SM 2320 B-97	Total Alkalinity	103					0.297	
SM 2540 C-97	TDS						4.06	
SM 4500 F-C-97	Fluoride	101	101	102				0.473
	Fluoride	102	101	102				0.947
SM 5310 B-00	Organic Carbon	102	99.1	100				1.19
USGS O-2060-01	2,4-D	73.9	62.4	66.3				5.43
	Acetaminophen	83.4	101	81.8				20.6
	Bentazon	48.0	47.2	49.4				4.29
	Carbamazepine	109	89.2	90.7				1.73
	Diuron	106	76.3	80.6				4.34
	Fenuron	105	49.5	49.3				0.324
	Fluridone	102	71.1	74.9				4.39
	Imidacloprid	106	154	163				5.87
	Linuron	98.6	91.2	94.6				3.66
	MCP	79.2	56.8	61.2				7.46
	Primidone	105	81.5	84.5				3.61
	Triclopyr	77.4	60.1	63.0				4.68

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1892637, 1892638
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1892637, 1892638
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1892637, 1892638
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1892639, 1892640
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1892639, 1892640
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1892639, 1892640
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1892639, 1892640
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1892641, 1892642
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1892664
SM 2120 B / E31780	True Color measured at 450 nm	1892637, 1892638
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1892637, 1892638
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1892637, 1892638
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1892637, 1892638
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1892637, 1892638
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1892639, 1892640
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1892664
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1892664

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	04/26/2017			04/26/2017 16:32	Sima Feizi	1892637, 1892638
EPA 300.0 Rev. 2.1	04/26/2017			05/03/2017	Ping Hua	1892638
	04/26/2017			05/04/2017	Ping Hua	1892637
EPA 350.1 Rev. 2.0	04/26/2017			04/27/2017	Julie Michelle Frank	1892639, 1892640
EPA 351.2 Rev. 2.0	04/26/2017	04/28/2017	Adrian Shelby	05/02/2017	Joseph Suarez	1892639, 1892640
EPA 353.2 Rev. 2.0	04/26/2017			04/28/2017	Beverly Y. Sanders	1892639, 1892640
EPA 365.1 Rev. 2.0	04/26/2017	04/28/2017	Vijayalakshmi Reddy	05/02/2017	Lipi Saha	1892639, 1892640
EPA 365.1 Rev. 2.0 dissolved	04/26/2017			04/26/2017 14:28	Anthony C. Onicha	1892641
	04/26/2017			04/26/2017 14:29	Anthony C. Onicha	1892642
EPA 8321B	04/26/2017	04/27/2017	Mohammad Ghaffari	04/27/2017	Mohammad Ghaffari	1892664
SM 2120 B	04/26/2017			04/26/2017 15:27	Julia Storbeck	1892637
	04/26/2017			04/26/2017 15:30	Julia Storbeck	1892638
SM 2320 B-97	04/26/2017			05/06/2017	Dale L. Simmons	1892637, 1892638
SM 2540 C-97	04/26/2017			05/01/2017	Yijie Li	1892637, 1892638
SM 2540 D-97	04/26/2017			05/01/2017	Yijie Li	1892637, 1892638
SM 4500 F-C-97	04/26/2017			05/19/2017	Dale L. Simmons	1892637, 1892638
SM 5310 B-00	04/26/2017			04/27/2017	Julie Michelle Frank	1892639, 1892640
USGS O-2060-01	04/26/2017	04/29/2017	Hoor Shaik	05/14/2017	Juyoung Kim	1892664