

Chemical Analysis Report

NE-DIST-2017-07-27-02

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

Event Description: **NASSAU WEST- 7/26/17**

Request ID: **RQ-2017-07-24-12**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way W
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 18-AUG-2017 13:37



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Calkins Crk Trib @ Hamp Register / C. Crews Rd. **Collection Date/Time: 07/26/2017 09:15**

Field ID: G4NE0050 07262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916809	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P329271	
	EPA 300.0 Rev. 2.1	Chloride	8.9	A	mg Cl/L	P329311	
		Sulfate	0.76	A	mg SO4/L	P329308	
	SM 2120 B	Color (true)	180		PCU	P329253	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P329456	
	SM 2540 C-97	TDS	77		mg/L	P329994	
	SM 2540 D-97	TSS	2	UA	mg/L	P329524	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P329460	RPD
1916812	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P329432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P329338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P329400	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P329411	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P329611	
1916815	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P329245	

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: Unnamed Branch @ CR125

Collection Date/Time: 07/26/2017 09:45

Field ID: G4NE0131 07262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916810	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P329271	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P329311	
		Sulfate	0.48	I	mg SO4/L	P329308	
	SM 2120 B	Color (true)	320		PCU	P329253	
	SM 2320 B-97	Total Alkalinity	6.9		mg CaCO3/L	P329456	
	SM 2540 C-97	TDS	72		mg/L	P329994	
	SM 2540 D-97	TSS	2	I	mg/L	P329524	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P329460	RPD
1916813	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P329433	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P329338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P329400	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P329411	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P329611	
1916816	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P329245	

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: Unnamed Trib to Little Mills Creek @ US1

Collection Date/Time: 07/26/2017 10:45

Field ID: G4NE0260 07262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916811	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P329272	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P329310	

Field ID: G4NE0260 07262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916811	EPA 300.0 Rev. 2.1	Sulfate	8.6		mg SO4/L	P329307	
	SM 2120 B	Color (true)	320		PCU	P329253	
	SM 2320 B-97	Total Alkalinity	101		mg CaCO3/L	P329456	
	SM 2540 C-97	TDS	193		mg/L	P329994	
	SM 2540 D-97	TSS	6	I	mg/L	P329524	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P329460	RPD
1916814	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P329433	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P329338	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P329400	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P329411	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P329611	
1916817	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.27		mg P/L	P329245	

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: Unnamed Trib to Little Mills Creek @ US1

Collection Date/Time: 07/26/2017 10:45

Field ID: G4NE0260 07262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916845	EPA 8321B	Sucralose**	0.030	I	ug/L	P329067	
	USGS O-2060-01	2,4-D	0.0032	I	ug/L	P329107	MS
		Diuron	0.0039		ug/L	P329107	
		Fenuron	0.0080	U	ug/L	P329107	
		Imidacloprid	0.0060		ug/L	P329107	
		Bentazon	8.0E-04	U	ug/L	P329107	MS
		Linuron	0.0040	U	ug/L	P329107	
		Acetaminophen**	0.0080	U	ug/L	P329107	
		MCP	0.0020	U	ug/L	P329107	
		Carbamazepine**	4.0E-04	U	ug/L	P329107	
		Triclopyr**	0.0040	U	ug/L	P329107	
		Primidone**	0.0040	U	ug/L	P329107	
		Fluridone**	4.0E-04	U	ug/L	P329107	MS, RPD

Ref. Method and Comment:

EPA 8321B: MS accuracy for sucralose 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: P329271

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P329272

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329272

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329307

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329308

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329310

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329311

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329432

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329433

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329338

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329400

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: P329411

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329245

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

Reference Method: EPA 8321B
Batch ID: P329067

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P329253

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329456

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

Reference Method: SM 2540 C-97
Batch ID: P329994

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329524

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329460

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329611

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P329107

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
MCPP	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: P329307

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329310

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329432

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329433

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329338

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329400

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329411

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329245

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

Reference Method: EPA 8321B
Batch ID: P329067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	61.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P329456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P329460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329611

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

Reference Method: USGS O-2060-01
Batch ID: P329107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
Acetaminophen	91.9		P	30 - 150
Bentazon	107		P	40 - 150
Carbamazepine	96.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P329107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	116		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	94.1		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	97.0		P	40 - 150
MCPP	94.4		P	40 - 150
Primidone	116		P	40 - 150
Triclopyr	94.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916818	Sulfate	93.3		P	90 - 110
1916981	Sulfate	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916695	Sulfate	93.5		P	90 - 110
1916809	Sulfate	91.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916818	Chloride	94.8		P	90 - 110
1916981	Chloride	96.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916695	Chloride	95.7		P	90 - 110
1916809	Chloride	93.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916747	Ammonia-N	97.2	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916813	Ammonia-N	103	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P329338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916829	Kjeldahl Nitrogen	102	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P329400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916756	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P329411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916237	Total-P	95.0	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P329245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916770	O-Phosphate-P	95.1	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P329460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916762	Fluoride	94.3	101	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P329611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915916	Organic Carbon	94.6	95.8	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P329107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916003	2,4-D	150	148	F/P	40 - 150
1916003	Acetaminophen	95.9	124	P/P	30 - 150
1916003	Bentazon	38.5	32.7	F/F	40 - 150
1916003	Carbamazepine	104	97.1	P/P	40 - 150
1916003	Diuron	68.4	74.7	P/P	40 - 150
1916003	Fenuron	69.8	72.5	P/P	40 - 150
1916003	Fluridone	37.7	60.2	F/P	40 - 150
1916003	Imidacloprid	107	135	P/P	40 - 160
1916003	Linuron	70.9	81.7	P/P	40 - 150
1916003	MCP	123	127	P/P	40 - 150
1916003	Primidone	103	112	P/P	40 - 150
1916003	Triclopyr	108	128	P/P	40 - 150

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916750	Turbidity	6.45	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916811	Turbidity	0.620	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916981	Sulfate	1.37	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916809	Sulfate	4.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916981	Chloride	1.41	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916809	Chloride	0.526	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916747	Ammonia-N	0.739	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916813	Ammonia-N	1.39	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916829	Kjeldahl Nitrogen	3.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916756	NO2NO3-N	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916237	Total-P	0.790	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916770	O-Phosphate-P	1.60	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P329067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916053	Sucralose	8.70	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P329253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916750	Color (true)	0.832	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916762	Total Alkalinity	0.105	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916765	TDS	0.320	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P329460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916762	Fluoride	4.56	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P329611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915916	Organic Carbon	1.02	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P329107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916003	2,4-D	0.772	Spike	P	0 - 30
1916003	Acetaminophen	19.0	Spike	P	0 - 30
1916003	Bentazon	7.55	Spike	P	0 - 30
1916003	Carbamazepine	6.79	Spike	P	0 - 30
1916003	Diuron	8.46	Spike	P	0 - 30
1916003	Fenuron	3.82	Spike	P	0 - 30
1916003	Fluridone	41.3	Spike	F	0 - 30
1916003	Imidacloprid	7.60	Spike	P	0 - 30
1916003	Linuron	14.2	Spike	P	0 - 30
1916003	MCPP	3.20	Spike	P	0 - 30
1916003	Primidone	8.76	Spike	P	0 - 30
1916003	Triclopyr	17.3	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: 1916845
 Field Sample ID: G4NE0260 07262017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	55.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	101	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	119	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	85.2	P	30 - 160
USGS O-2060-01	Diuron-d6	64.2	P	30 - 160
USGS O-2060-01	Primidone-d5	50.8	P	30 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77948

Included Lab Sample IDs: 1916809, 1916810, 1916811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	102	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	102	99.0	P/P	90 - 110
Sulfate	99.0	100	P/P	90 - 110
Sulfate	99.0	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77996

Included Lab Sample IDs: 1916815, 1916816, 1916817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	103	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A77997

Included Lab Sample IDs: 1916809, 1916810, 1916811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	105	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A78004

Included Lab Sample IDs: 1916809, 1916810, 1916811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78053

Included Lab Sample IDs: 1916812, 1916813, 1916814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78068

Included Lab Sample IDs: 1916812, 1916813, 1916814

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78069

Included Lab Sample IDs: 1916813, 1916814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.3	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78071

Included Lab Sample IDs: 1916812, 1916813, 1916814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A78079

Included Lab Sample IDs: 1916809, 1916810, 1916811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A78079

Included Lab Sample IDs: 1916809, 1916810, 1916811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78080

Included Lab Sample IDs: 1916812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	98.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78156

Included Lab Sample IDs: 1916812, 1916813, 1916814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A78247

Included Lab Sample IDs: 1916845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	60.3	67.8	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1916845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	73.7	65.7	P/P	50 - 150
Acetaminophen	93.7	99.5	P/P	60 - 150
Bentazon	106	116	P/P	50 - 150
Carbamazepine	88.2	95.7	P/P	60 - 150
Diuron	96.9	89.7	P/P	60 - 150
Fenuron	103	103	P/P	60 - 150
Fluridone	89.3	99.1	P/P	60 - 160
Imidacloprid	95.1	92.6	P/P	60 - 150
Linuron	98.1	101	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1916845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	78.0	86.1	P/P	50 - 150
Primidone	94.2	94.8	P/P	60 - 150
Triclopyr	72.9	73.4	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				6.45	
	Turbidity				0.620	
EPA 300.0 Rev. 2.1	Chloride	97.5	96.1 94.8		1.41	
	Chloride	95.6	93.2 95.7		0.526	
	Sulfate	94.3	94.3 93.3		1.37	
	Sulfate	92.0	91.8 93.5		4.46	
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.2 98.0			0.739
	Ammonia-N	103	103 101			1.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	102 107			3.70
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104 102			1.45
EPA 365.1 Rev. 2.0	Total-P	96.4	95.0 95.8			0.790
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	95.1 97.9			1.60
EPA 8321B	Sucralose	61.6				8.70
SM 2120 B	Color (true)				0.832	
SM 2320 B-97	Total Alkalinity	102			0.105	
SM 2540 C-97	TDS				0.320	
SM 4500 F-C-97	Fluoride	95.1	94.3 101			4.56
SM 5310 B-00	Organic Carbon	96.4	94.6 95.8			1.02
USGS O-2060-01	2,4-D	105	150 148			0.772
	Acetaminophen	91.9	95.9 124			19.0
	Bentazon	107	38.5 32.7			7.55
	Carbamazepine	96.7	104 97.1			6.79
	Diuron	116	68.4 74.7			8.46
	Fenuron	112	69.8 72.5			3.82
	Fluridone	94.1	37.7 60.2			41.3
	Imidacloprid	102	107 135			7.60
	Linuron	97.0	70.9 81.7			14.2
	MCP	94.4	123 127			3.20
	Primidone	116	103 112			8.76
	Triclopyr	94.4	108 128			17.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1916809, 1916810, 1916811

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1916809, 1916810, 1916811
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1916809, 1916810, 1916811
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1916812, 1916813, 1916814
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1916812, 1916813, 1916814
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1916812, 1916813, 1916814
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1916812, 1916813, 1916814
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1916815, 1916816, 1916817
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1916845
SM 2120 B / E31780	True Color measured at 450 nm	1916809, 1916810, 1916811
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1916809, 1916810, 1916811
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1916809, 1916810, 1916811
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1916809, 1916810, 1916811
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1916809, 1916810, 1916811
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1916812, 1916813, 1916814
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1916845
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1916845

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	07/27/2017			07/27/2017 17:18	DeAsia Armster	1916809, 1916810, 1916811
EPA 300.0 Rev. 2.1	07/27/2017			07/27/2017	Julia Storbeck	1916809, 1916810, 1916811
EPA 350.1 Rev. 2.0	07/27/2017			07/31/2017	Sofia Elnemr	1916812, 1916813, 1916814
EPA 351.2 Rev. 2.0	07/27/2017	07/28/2017	Adrian Shelby	08/01/2017	Joseph Suarez	1916812, 1916813, 1916814
EPA 353.2 Rev. 2.0	07/27/2017			07/31/2017	Beverly Y. Sanders	1916812, 1916813, 1916814
EPA 365.1 Rev. 2.0	07/27/2017	07/31/2017	Adrian Shelby	08/01/2017	Lipi Saha	1916812, 1916813, 1916814
EPA 365.1 Rev. 2.0 dissolved	07/27/2017			07/27/2017 14:45	Ping Hua	1916815
	07/27/2017			07/27/2017 14:46	Ping Hua	1916816
	07/27/2017			07/27/2017 14:47	Ping Hua	1916817
EPA 8321B	07/27/2017	07/27/2017	Julie Michelle Frank	08/04/2017	Mohammad Ghaffari	1916845
SM 2120 B	07/27/2017			07/27/2017 15:51	Tanya Welborn	1916809
	07/27/2017			07/27/2017 15:52	Tanya Welborn	1916810
	07/27/2017			07/27/2017 15:53	Tanya Welborn	1916811
SM 2320 B-97	07/27/2017			08/01/2017	Dale L. Simmons	1916809, 1916810, 1916811
SM 2540 C-97	07/27/2017			07/31/2017	DeAsia Armster	1916809, 1916810, 1916811
SM 2540 D-97	07/27/2017			07/31/2017	DeAsia Armster	1916809, 1916810, 1916811
SM 4500 F-C-97	07/27/2017			08/01/2017	Dale L. Simmons	1916809, 1916810, 1916811
SM 5310 B-00	07/27/2017			08/02/2017	Ping Hua	1916812, 1916813, 1916814
USGS O-2060-01	07/27/2017	07/28/2017	Hoor Shaik	08/02/2017	Juyoung Kim	1916845