

Chemical Analysis Report

SW-DIST-2017-02-22-01

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

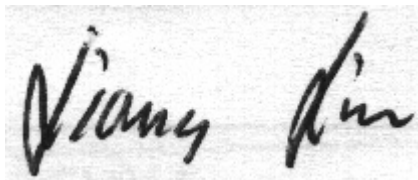
Event Description: **SMP RUN 11**
Request ID: **RQ-2017-02-20-20**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-MAR-2017 14:22

A handwritten signature in black ink, appearing to read "Liang Lin", 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: KLOSTERMAN

Collection Date/Time: 02/21/2017 10:20

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874741	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P320311	
	SM 2320 B-97	Total Alkalinity	124	A	mg CaCO3/L	P320591	
	SM 2540 D-97	TSS	3	U	mg/L	P320841	
	SM 4500 F-C-97	Fluoride	0.60		mg F/L	P320599	
1874744	EPA 350.1 Rev. 2.0	Ammonia-N	0.45		mg N/L	P320606	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P320432	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P320720	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P320376	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P320485	
1874747	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P320306	

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: BISHOP TIDAL

Collection Date/Time: 02/21/2017 11:00

Field ID: G5SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874742	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P320311	
	SM 2320 B-97	Total Alkalinity	177		mg CaCO3/L	P320703	
	SM 2540 D-97	TSS	3	I	mg/L	P320840	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P320895	
1874745	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P320509	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P321075	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P320471	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P320485	
1874748	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.095		mg P/L	P320305	

Sample Location: CEDAR TIDAL

Collection Date/Time: 02/21/2017 12:00

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874743	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P320311	
	SM 2320 B-97	Total Alkalinity	136		mg CaCO3/L	P320704	
	SM 2540 D-97	TSS	4	I	mg/L	P320840	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P320895	
1874746	EPA 350.1 Rev. 2.0	Ammonia-N	0.097		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P320509	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.077		mg N/L	P321075	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P320472	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P320485	
1874749	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P320305	

Sample Location: KLOSTERMAN

Collection Date/Time: 02/21/2017 10:20

Field ID: G5SW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874759	EPA 8321B	Sucralose**	15		ug/L	P320274	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P320202	
		Fenuron	0.0080	U	ug/L	P320202	
		Imidacloprid	0.011	I	ug/L	P320202	
		Linuron	0.0040	U	ug/L	P320202	
		Acetaminophen**	0.0040	U	ug/L	P320202	
		Carbamazepine**	0.024		ug/L	P320202	
		Primidone**	0.042		ug/L	P320202	
		Fluridone**	0.0018		ug/L	P320202	MS

Sample Location: BISHOP TIDAL

Collection Date/Time: 02/21/2017 11:00

Field ID: G5SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874760	EPA 8321B	Sucralose**	0.085		ug/L	P320274	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P320202	
		Fenuron	0.0080	U	ug/L	P320202	
		Imidacloprid	0.025		ug/L	P320202	
		Linuron	0.0040	U	ug/L	P320202	
		Acetaminophen**	0.0040	U	ug/L	P320202	
		Carbamazepine**	4.0E-04	U	ug/L	P320202	
		Primidone**	0.0080	U	ug/L	P320202	
		Fluridone**	0.010		ug/L	P320202	MS

Sample Location: CEDAR TIDAL

Collection Date/Time: 02/21/2017 12:00

Field ID: G5SW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874761	EPA 8321B	Sucralose**	1.3		ug/L	P320274	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P320202	
		Fenuron	0.0080	U	ug/L	P320202	
		Imidacloprid	0.028		ug/L	P320202	
		Linuron	0.0040	U	ug/L	P320202	
		Acetaminophen**	0.0040	U	ug/L	P320202	
		Carbamazepine**	9.8E-04	I	ug/L	P320202	
		Primidone**	0.0080	U	ug/L	P320202	
		Fluridone**	0.0075		ug/L	P320202	MS

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320311

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320606

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320432

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320509

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321075

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320376

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320472

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: P320305

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320306

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P320591

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

Reference Method: SM 2320 B-97
Batch ID: P320703

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

Reference Method: SM 2320 B-97
Batch ID: P320704

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

Reference Method: SM 2540 D-97
Batch ID: P320840

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320841

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320599

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P320895

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320485

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

Reference Method: USGS O-2060-01
Batch ID: P320202

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320432

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321075

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: P320376

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320472

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320305

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320306

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P320591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P320703

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

Reference Method: SM 2320 B-97
Batch ID: P320704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P320599

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P320895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	79.2		P	40 - 140
Carbamazepine	115		P	40 - 140
Diuron	85.2		P	40 - 140
Fenuron	105		P	40 - 140
Fluridone	86.8		P	40 - 140
Imidacloprid	102		P	40 - 160
Linuron	92.8		P	40 - 140
Primidone	86.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874188	Ammonia-N	103	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874745	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874713	Kjeldahl Nitrogen	96.3	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875345	Kjeldahl Nitrogen	106	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874744	NO2NO3-N	98.6	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874746	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874713	Total-P	95.7	90.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874501	Total-P	96.9	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874958	Total-P	97.4	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874783	O-Phosphate-P	97.2	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874820	O-Phosphate-P	95.3	94.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P320274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874519	Sucralose	82.6	74.3	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P320599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874741	Fluoride	96.4	98.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P320895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875369	Fluoride	97.0	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P320485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874958	Organic Carbon	96.1	96.8	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874049	Acetaminophen	72.4	72.0	P/P	40 - 140
1874049	Carbamazepine	58.0	49.6	P/P	40 - 140
1874049	Diuron	41.2	46.8	P/P	40 - 140
1874049	Fenuron	49.2	49.2	P/P	40 - 140
1874049	Fluridone	38.7	48.3	F/P	40 - 140
1874049	Imidacloprid	113	110	P/P	40 - 160
1874049	Linuron	70.0	60.8	P/P	40 - 140
1874049	Primidone	48.0	58.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874741	Turbidity	1.23	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874188	Ammonia-N	1.54	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874745	Ammonia-N	0.336	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874713	Kjeldahl Nitrogen	2.65	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875345	Kjeldahl Nitrogen	2.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874744	NO2NO3-N	0.919	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874746	NO2NO3-N	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874713	Total-P	4.99	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874501	Total-P	0.561	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874958	Total-P	0.0478	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874783	O-Phosphate-P	3.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874820	O-Phosphate-P	1.06	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P320274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874519	Sucralose	10.4	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P320591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874741	Total Alkalinity	1.48	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P320703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875369	Total Alkalinity	0.108	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P320704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875611	Total Alkalinity	0.447	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P320840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874972	TSS	6.67	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P320599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874741	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P320895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875369	Fluoride	1.57	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874958	Organic Carbon	0.777	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P320202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874049	Acetaminophen	0.554	Spike	P	0 - 30
1874049	Carbamazepine	15.6	Spike	P	0 - 30
1874049	Diuron	12.7	Spike	P	0 - 30
1874049	Fenuron	0.0	Spike	P	0 - 30
1874049	Fluridone	19.8	Spike	P	0 - 30
1874049	Imidacloprid	2.15	Spike	P	0 - 30
1874049	Linuron	14.1	Spike	P	0 - 30
1874049	Primidone	19.5	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: 1874759
Field Sample ID: G5SW0035

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	81.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	45.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	65.4	P	40 - 160
USGS O-2060-01	Diuron-d6	43.2	P	40 - 150
USGS O-2060-01	Primidone-d5	80.0	P	40 - 150

Lab Sample ID: 1874760
Field Sample ID: G5SW0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1874760
Field Sample ID: G5SW0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	107	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	73.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	82.0	P	40 - 160
USGS O-2060-01	Diuron-d6	49.0	P	40 - 150
USGS O-2060-01	Primidone-d5	89.4	P	40 - 150

Lab Sample ID: 1874761
Field Sample ID: G5SW0128

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	100	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	58.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	72.8	P	40 - 160
USGS O-2060-01	Diuron-d6	43.6	P	40 - 150
USGS O-2060-01	Primidone-d5	81.2	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74651
Included Lab Sample IDs: 1874747, 1874748, 1874749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74653
Included Lab Sample IDs: 1874741, 1874742, 1874743

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

Reference Method: USGS O-2060-01
Run ID: A74666
Included Lab Sample IDs: 1874759, 1874760, 1874761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	91.6	96.4	P/P	60 - 150
Carbamazepine	116	133	P/P	60 - 150
Diuron	111	105	P/P	60 - 150
Fenuron	122	125	P/P	60 - 150
Fluridone	119	111	P/P	60 - 150
Imidacloprid	110	109	P/P	60 - 150
Linuron	89.6	90.0	P/P	60 - 150
Primidone	121	112	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A74670

Included Lab Sample IDs: 1874759, 1874760, 1874761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.5	114	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74707

Included Lab Sample IDs: 1874744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	98.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74718

Included Lab Sample IDs: 1874744, 1874745, 1874746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74740

Included Lab Sample IDs: 1874745, 1874746

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: A74749

Included Lab Sample IDs: 1874744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	97.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74752

Included Lab Sample IDs: 1874741

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

Reference Method: SM 4500 F-C-97

Run ID: A74752

Included Lab Sample IDs: 1874741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74758

Included Lab Sample IDs: 1874744, 1874745, 1874746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A74774
Included Lab Sample IDs: 1874745, 1874746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	100	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A74795
Included Lab Sample IDs: 1874742, 1874743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74796
Included Lab Sample IDs: 1874744

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

Reference Method: SM 4500 F-C-97
Run ID: A74865
Included Lab Sample IDs: 1874742, 1874743

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74934
Included Lab Sample IDs: 1874745, 1874746

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	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				1.23	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	103	101		1.54
	Ammonia-N	101	100	101		0.336
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	96.3	99.6		2.65
	Kjeldahl Nitrogen	108	106	110		2.55
EPA 353.2 Rev. 2.0	NO2NO3-N	104	98.6	99.6		0.919
	NO2NO3-N	104	102	103		1.07
EPA 365.1 Rev. 2.0	Total-P	97.9	95.7	90.6		4.99
	Total-P	95.0	96.9	97.5		0.561
	Total-P	99.5	97.4	97.4		0.0478

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	97.2	100			3.34
	O-Phosphate-P	100	95.3	94.1			1.06
EPA 8321B	Sucralose	89.7	82.6	74.3			10.4
SM 2320 B-97	Total Alkalinity	104				1.48	
	Total Alkalinity	103				0.108	
	Total Alkalinity	104				0.447	
SM 2540 D-97	TSS					6.67	
SM 4500 F-C-97	Fluoride	98.0	96.4	98.8			1.42
	Fluoride	97.0	97.0	98.9			1.57
SM 5310 B-00	Organic Carbon	96.8	96.1	96.8			0.777
USGS O-2060-01	Acetaminophen	79.2	72.4	72.0			0.554
	Carbamazepine	115	58.0	49.6			15.6
	Diuron	85.2	41.2	46.8			12.7
	Fenuron	105	49.2	49.2			0.0
	Fluridone	86.8	38.7	48.3			19.8
	Imidacloprid	102	113	110			2.15
	Linuron	92.8	70.0	60.8			14.1
	Primidone	86.4	48.0	58.4			19.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1874741, 1874742, 1874743
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1874744, 1874745, 1874746
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1874744, 1874745, 1874746
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1874744, 1874745, 1874746
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1874744, 1874745, 1874746
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1874747, 1874748, 1874749
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1874759, 1874760, 1874761
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1874741, 1874742, 1874743
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1874741, 1874742, 1874743
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1874741, 1874742, 1874743
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1874744, 1874745, 1874746
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1874759, 1874760, 1874761

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	02/22/2017			02/22/2017 15:55	Sima Feizi	1874741, 1874742, 1874743
EPA 350.1 Rev. 2.0	02/22/2017			02/27/2017	Sofia Elnemr	1874744, 1874745, 1874746
EPA 351.2 Rev. 2.0	02/22/2017	02/24/2017	Adrian Shelby	02/27/2017	Joseph Suarez	1874744
	02/22/2017	02/27/2017	Adrian Shelby	02/28/2017	Joseph Suarez	1874745, 1874746
EPA 353.2 Rev. 2.0	02/22/2017			03/01/2017	Beverly Y. Sanders	1874744
	02/22/2017			03/07/2017	Beverly Y. Sanders	1874745, 1874746
EPA 365.1 Rev. 2.0	02/22/2017	02/23/2017	Adrian Shelby	02/24/2017	Lipi Saha	1874744
	02/22/2017	02/24/2017	Vijayalakshmi Reddy	02/27/2017	Lipi Saha	1874745, 1874746
EPA 365.1 Rev. 2.0 dissolved	02/22/2017			02/22/2017 14:38	Julia Storbeck	1874747
	02/22/2017			02/22/2017 14:39	Julia Storbeck	1874748
	02/22/2017			02/22/2017 14:40	Julia Storbeck	1874749
EPA 8321B	02/22/2017	02/22/2017	Mohammad Ghaffari	02/22/2017	Mohammad Ghaffari	1874759, 1874760, 1874761
SM 2320 B-97	02/22/2017			02/25/2017	Dale L. Simmons	1874741
	02/22/2017			03/01/2017	Dale L. Simmons	1874742, 1874743
SM 2540 D-97	02/22/2017			02/24/2017	Yijie Li	1874741, 1874742, 1874743
SM 4500 F-C-97	02/22/2017			02/25/2017	Dale L. Simmons	1874741
	02/22/2017			03/03/2017	Dale L. Simmons	1874742, 1874743
SM 5310 B-00	02/22/2017			02/24/2017	Julie Michelle Frank	1874744, 1874745, 1874746
USGS O-2060-01	02/22/2017	02/23/2017	Hoor Shaik	02/24/2017	Juyoung Kim	1874759, 1874760, 1874761