

Chemical Analysis Report

NW-DIST-2017-07-21-01

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

Event Description: **ENR B WBID 778A 786 874A 754**

Request ID: **RQ-2017-06-19-26**

Customer: **NW-DIST**

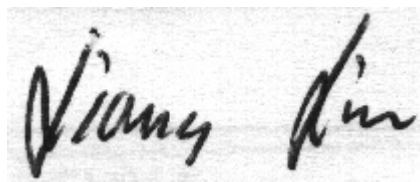
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Attn: Michael King

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

Date Certified: 10-AUG-2017 16:19

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: Cinco Bayou West of Cinco Bridge

Collection Date/Time: 07/20/2017 11:30

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915318	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P328944	
	SM 2320 B-97	Total Alkalinity	49		mg CaCO3/L	P329082	
	SM 2540 D-97	TSS	3	UA	mg/L	P329371	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P329187	
1915323	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P329096	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P328965	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P329208	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P328992	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P329078	
1915328	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328963	

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: Garnier Bayou @ Paradise Point

Collection Date/Time: 07/20/2017 11:55

Field ID: G3NW0087

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915319	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	43		mg CaCO3/L	P329082	
	SM 2540 D-97	TSS	3	I	mg/L	P329368	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P329187	
1915324	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P329096	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P328965	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P329208	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P328992	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P329078	
1915329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328963	

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: Lake Earl, Center

Collection Date/Time: 07/20/2017 12:50

Field ID: G3NW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915320	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P329082	
	SM 2540 D-97	TSS	3	U	mg/L	P329371	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P329187	
1915325	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P329096	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P328965	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P329208	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P328992	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P329078	
1915330	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328963	

Field ID: G3NW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: Poquito Bayou, Middle

Collection Date/Time: 07/20/2017 12:15

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915321	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	46	A	mg CaCO3/L	P329082	
	SM 2540 D-97	TSS	2	I	mg/L	P329368	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P329187	
1915326	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P329098	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P328968	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P329209	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P329046	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P329078	
1915331	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328963	

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: Poquito Bayou, Middle

Collection Date/Time: 07/20/2017 12:15

Field ID: G3NW0086

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915354	EPA 8321B	Sucralose**	0.10		ug/L	P328877	
	USGS O-2060-01	2,4-D	0.0032	I	ug/L	P328863	
		Diuron	8.0E-04	U	ug/L	P328863	
		Fenuron	0.049		ug/L	P328863	
		Imidacloprid	0.036		ug/L	P328863	MS
		Bentazon	8.3E-04	I	ug/L	P328863	
		Linuron	0.0040	U	ug/L	P328863	
		Acetaminophen**	0.0080	U	ug/L	P328863	MS
		MCP	0.0020	U	ug/L	P328863	MS
		Carbamazepine**	7.4E-04	I	ug/L	P328863	
		Triclopyr**	0.0040	U	ug/L	P328863	RPD
		Primidone**	0.0040	U	ug/L	P328863	
		Fluridone**	4.0E-04	U	ug/L	P328863	

Ref. Method and Comment:
 USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Chocawhatchee Bay Lower Sect. B.
 Background

Collection Date/Time: 07/20/2017 12:30

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915322	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P328944	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P329082	

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915322	SM 2540 D-97	TSS	3	U	mg/L	P329372	
	SM 4500 F-C-97	Fluoride	0.41		mg F/L	P329187	
1915327	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P329098	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P328968	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P329209	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P329046	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P329125	
1915332	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328951	

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: Chocawhatchee Bay Lower Sect. B.
Background

Collection Date/Time: 07/20/2017 12:30

Field ID: G3NW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915355	EPA 8321B	Sucralose**	0.16		ug/L	P328877	
	USGS O-2060-01	2,4-D	0.0085		ug/L	P328863	
		Diuron	0.0013	I	ug/L	P328863	
		Fenuron	0.0080	U	ug/L	P328863	
		Imidacloprid	0.0050		ug/L	P328863	MS
		Bentazon	0.0015	I	ug/L	P328863	
		Linuron	0.0040	U	ug/L	P328863	
		Acetaminophen**	0.0080	U	ug/L	P328863	MS
		MCP	0.0020	U	ug/L	P328863	MS
		Carbamazepine**	0.0018		ug/L	P328863	
		Triclopyr**	0.0040	U	ug/L	P328863	RPD
		Primidone**	0.0040	U	ug/L	P328863	
		Fluridone**	4.0E-04	U	ug/L	P328863	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328944

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329096

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328965

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329208

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328992

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P328877

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P329082

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

Reference Method: SM 2540 D-97
Batch ID: P329368

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329371

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329372

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329078

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

Reference Method: SM 5310 B-00
Batch ID: P329125

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

Reference Method: USGS O-2060-01
Batch ID: P328863

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P328863

Component	Result	Code	Units
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 350.1 Rev. 2.0
Batch ID: P329096

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: P329098

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328965

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329208

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328992

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

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: P328951

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

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

Reference Method: EPA 8321B
Batch ID: P328877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	63.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P329082

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

Reference Method: SM 4500 F-C-97
Batch ID: P329187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329078

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

Reference Method: SM 5310 B-00
Batch ID: P329125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P328863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
Acetaminophen	119		P	30 - 150
Bentazon	117		P	40 - 150
Carbamazepine	125		P	40 - 150
Diuron	130		P	40 - 150
Fenuron	149		P	40 - 150
Fluridone	124		P	40 - 150
Imidacloprid	117		P	40 - 160
Linuron	117		P	40 - 150
MCPP	98.8		P	40 - 150
Primidone	132		P	40 - 150
Triclopyr	92.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914893	Ammonia-N	105	93.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915326	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915324	Kjeldahl Nitrogen	100	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915512	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915029	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915326	NO2NO3-N	104	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914975	Total-P	101	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P329046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915327	Total-P	99.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P328951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915332	O-Phosphate-P	94.2	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P328963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915535	O-Phosphate-P	94.9	97.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P328877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915262	Sucralose	45.6	55.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P329187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915321	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P329078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915067	Organic Carbon	98.2		P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P329125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914352	Organic Carbon	93.7	92.1	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P328863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915258	Acetaminophen	149	150	P/F	30 - 150
1915258	Bentazon	52.8	54.8	P/P	40 - 150
1915258	Carbamazepine	115	125	P/P	40 - 150
1915258	Diuron	86.5	102	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P328863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915258	Fenuron	84.3	101	P/P	40 - 150
1915258	Fluridone	74.1	64.2	P/P	40 - 150
1915258	Imidacloprid	168	186	F/F	40 - 160
1915258	Linuron	93.1	107	P/P	40 - 150
1915258	MCP	134	178	P/F	40 - 150
1915258	Primidone	120	116	P/P	40 - 150
1915258	Triclopyr	104	143	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915318	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914893	Ammonia-N	10.1	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915326	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915324	Kjeldahl Nitrogen	2.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915512	Kjeldahl Nitrogen	1.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329208

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915029	NO2NO3-N	0.971	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915326	NO2NO3-N	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914975	Total-P	1.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915327	Total-P	1.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915332	O-Phosphate-P	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915535	O-Phosphate-P	2.19	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915262	Sucralose	19.2	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P329082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915321	Total Alkalinity	0.00491	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P329187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915321	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P329078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915067	Organic Carbon	2.38	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P329125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914352	Organic Carbon	1.43	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P328863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915258	2,4-D	10.5	Spike	P	0 - 30
1915258	Acetaminophen	0.627	Spike	P	0 - 30
1915258	Bentazon	1.34	Spike	P	0 - 30
1915258	Carbamazepine	8.33	Spike	P	0 - 30
1915258	Diuron	12.8	Spike	P	0 - 30
1915258	Fenuron	17.7	Spike	P	0 - 30
1915258	Fluridone	13.2	Spike	P	0 - 30
1915258	Imidacloprid	6.20	Spike	P	0 - 30
1915258	Linuron	13.7	Spike	P	0 - 30
1915258	MCP	28.1	Spike	P	0 - 30
1915258	Primidone	3.06	Spike	P	0 - 30
1915258	Triclopyr	32.0	Spike	F	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: 1915354
 Field Sample ID: G3NW0086

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	70.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	125	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	140	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	144	P	30 - 160
USGS O-2060-01	Diuron-d6	101	P	30 - 160
USGS O-2060-01	Primidone-d5	132	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1915355
Field Sample ID: G3NW0089

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	56.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	142	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	148	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	133	P	30 - 160
USGS O-2060-01	Diuron-d6	124	P	30 - 160
USGS O-2060-01	Primidone-d5	150	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A77872
Included Lab Sample IDs: 1915318, 1915319, 1915320, 1915321, 1915322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77873
Included Lab Sample IDs: 1915328, 1915329, 1915330, 1915331, 1915332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	98.8	P/P	90 - 110
O-Phosphate-P	98.3	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77933
Included Lab Sample IDs: 1915326, 1915327

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

Reference Method: SM 5310 B-00
Run ID: A77939
Included Lab Sample IDs: 1915323, 1915324, 1915325, 1915326

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

Reference Method: SM 2320 B-97
Run ID: A77941
Included Lab Sample IDs: 1915318, 1915319, 1915320, 1915321, 1915322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77945
Included Lab Sample IDs: 1915323, 1915324, 1915325, 1915326, 1915327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77945

Included Lab Sample IDs: 1915323, 1915324, 1915325, 1915326, 1915327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77952

Included Lab Sample IDs: 1915327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77956

Included Lab Sample IDs: 1915323, 1915324, 1915325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77980

Included Lab Sample IDs: 1915318, 1915319, 1915320, 1915321, 1915322

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.4	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77987

Included Lab Sample IDs: 1915323, 1915324, 1915325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77988

Included Lab Sample IDs: 1915323, 1915324, 1915325, 1915326, 1915327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78013

Included Lab Sample IDs: 1915326, 1915327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.8	P/P	90 - 110
Total-P	98.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78113

Included Lab Sample IDs: 1915354, 1915355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	123	115	P/P	50 - 150
Acetaminophen	129	137	P/P	60 - 150
Bentazon	124	123	P/P	50 - 150
Carbamazepine	139	107	P/P	60 - 150
Diuron	131	136	P/P	60 - 150
Fenuron	142	130	P/P	60 - 150
Fluridone	117	125	P/P	60 - 160
Imidacloprid	123	100	P/P	60 - 150
Linuron	115	129	P/P	60 - 150
MCP	109	120	P/P	50 - 150
Primidone	119	121	P/P	60 - 150
Triclopyr	113	101	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A78123

Included Lab Sample IDs: 1915354, 1915355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	60.8	66.1	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.0	
EPA 350.1 Rev. 2.0	Ammonia-N	100	105 93.3			10.1
	Ammonia-N	103	104 106			1.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	100 97.1			2.84
	Kjeldahl Nitrogen	109	102 101			1.25
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	104 102			0.971
	NO ₂ NO ₃ -N	102	104 102			1.37
EPA 365.1 Rev. 2.0	Total-P	93.9	101 99.6			1.19
	Total-P	101	99.3 101			1.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	94.2 96.0			1.89
	O-Phosphate-P	103	94.9 97.0			2.19
EPA 8321B	Sucralose	63.6	45.6 55.7			19.2
SM 2320 B-97	Total Alkalinity	102			0.0049	
SM 4500 F-C-97	Fluoride	96.5	97.6 97.6			0.0
SM 5310 B-00	Organic Carbon	102	98.2			2.38
	Organic Carbon	98.6	93.7 92.1			1.43
USGS O-2060-01	2,4-D	110				10.5
	Acetaminophen	119	149 150			0.627
	Bentazon	117	52.8 54.8			1.34
	Carbamazepine	125	115 125			8.33
	Diuron	130	86.5 102			12.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
USGS O-2060-01	Fenuron	149	84.3	101		17.7
	Fluridone	124	74.1	64.2		13.2
	Imidacloprid	117	168	186		6.20
	Linuron	117	93.1	107		13.7
	MCPP	98.8	134	178		28.1
	Primidone	132	120	116		3.06
	Triclopyr	92.1	104	143		32.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1915318, 1915319, 1915320, 1915321, 1915322
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1915323, 1915324, 1915325, 1915326, 1915327
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1915323, 1915324, 1915325, 1915326, 1915327
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1915323, 1915324, 1915325, 1915326, 1915327
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1915323, 1915324, 1915325, 1915326, 1915327
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1915328, 1915329, 1915330, 1915331, 1915332
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1915354, 1915355
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1915318, 1915319, 1915320, 1915321, 1915322
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1915318, 1915319, 1915320, 1915321, 1915322
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1915318, 1915319, 1915320, 1915321, 1915322
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1915323, 1915324, 1915325, 1915326, 1915327
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1915354, 1915355
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1915354, 1915355

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	07/21/2017			07/21/2017 15:46	DeAsia Armster	1915318, 1915319, 1915320, 1915321, 1915322
EPA 350.1 Rev. 2.0	07/21/2017			07/25/2017	Sofia Elnemr	1915323, 1915324, 1915325, 1915326, 1915327
EPA 351.2 Rev. 2.0	07/21/2017	07/24/2017	Adrian Shelby	07/25/2017	Joseph Suarez	1915326, 1915327
	07/21/2017	07/24/2017	Adrian Shelby	07/27/2017	Joseph Suarez	1915323, 1915324, 1915325
EPA 353.2 Rev. 2.0	07/21/2017			07/27/2017	Beverly Y. Sanders	1915323, 1915324, 1915325, 1915326, 1915327
EPA 365.1 Rev. 2.0	07/21/2017	07/24/2017	Vijayalakshmi Reddy	07/26/2017	Lipi Saha	1915323, 1915324, 1915325
	07/21/2017	07/25/2017	Vijayalakshmi Reddy	07/28/2017	Lipi Saha	1915326, 1915327
EPA 365.1 Rev. 2.0 dissolved	07/21/2017			07/21/2017 15:03	Ping Hua	1915332
	07/21/2017			07/21/2017 15:40	Ping Hua	1915328, 1915329
	07/21/2017			07/21/2017 15:41	Ping Hua	1915330
	07/21/2017			07/21/2017 15:42	Ping Hua	1915331
EPA 8321B	07/21/2017	07/27/2017	Julie Michelle Frank	07/27/2017	Mohammad Ghaffari	1915354, 1915355
SM 2320 B-97	07/21/2017			07/25/2017	Dale L. Simmons	1915318, 1915319, 1915320, 1915321, 1915322
SM 2540 D-97	07/21/2017			07/26/2017	Yijie Li	1915318, 1915319, 1915320, 1915321, 1915322
SM 4500 F-C-97	07/21/2017			07/27/2017	Dale L. Simmons	1915318, 1915319, 1915320, 1915321, 1915322
SM 5310 B-00	07/21/2017			07/24/2017	Sofia Elnemr	1915323
	07/21/2017			07/25/2017	Ping Hua	1915327
	07/21/2017			07/25/2017	Sofia Elnemr	1915324, 1915325, 1915326
USGS O-2060-01	07/21/2017	07/24/2017	Hoor Shaik	07/31/2017	Juyoung Kim	1915354, 1915355