Chemical Analysis Report

NW-DIST-2017-07-19-02

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

Event Description: **ENR D WBID 548GB 738**
Request ID: **RQ-2017-06-12-32**
Customer: **NW-DIST**
Project ID: **SMP**

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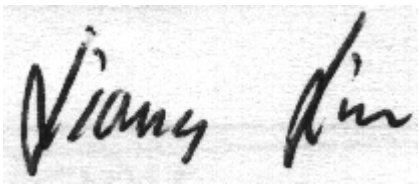
Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-AUG-2017 13:09



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: TEXAR BAYOU **Collection Date/Time: 07/18/2017 11:25**

Field ID: G4NW0402 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914612	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P328799	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P328972	
	SM 2540 D-97	TSS	5	I	mg/L	P329298	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P329084	
1914616	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P329111	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P329048	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P329126	
1914620	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328789	

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: TEXAR BAYOU **Collection Date/Time: 07/18/2017 11:25**

Field ID: G4NW0402 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914639	EPA 8321B	Sucralose**	0.046		ug/L	P328764	
	USGS O-2060-01	2,4-D	0.0097		ug/L	P328838	
		Diuron	0.0031	I	ug/L	P328838	
		Fenuron	0.0080	U	ug/L	P328838	
		Imidacloprid	0.019		ug/L	P328838	MS
		Bentazon	0.0016	I	ug/L	P328838	
		Linuron	0.0040	U	ug/L	P328838	
		Acetaminophen**	0.0080	U	ug/L	P328838	
		MCPP	0.0020	U	ug/L	P328838	
		Carbamazepine**	7.1E-04	I	ug/L	P328838	
		Triclopyr**	0.0040	U	ug/L	P328838	
		Primidone**	0.0040	U	ug/L	P328838	
		Fluridone**	4.0E-04	U	ug/L	P328838	

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: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 11:50**

Field ID: G4NW0401 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914613	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P328799	
	SM 2320 B-97	Total Alkalinity	7.9		mg CaCO3/L	P328972	
	SM 2540 D-97	TSS	4	I	mg/L	P329298	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P329084	
1914617	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P329111	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P329048	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P328929	

Field ID: G4NW0401 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914617	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P329126	
1914621	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328789	

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: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 11:50**

Field ID: G4NW0401 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914640	EPA 8321B	Sucralose**	0.045		ug/L	P328764	
	USGS O-2060-01	2,4-D	0.0070	I	ug/L	P328838	
		Diuron	8.0E-04	U	ug/L	P328838	
		Fenuron	0.0080	U	ug/L	P328838	
		Imidacloprid	0.0055		ug/L	P328838	MS
		Bentazon	0.0011	I	ug/L	P328838	
		Linuron	0.0040	U	ug/L	P328838	
		Acetaminophen**	0.0080	U	ug/L	P328838	
		MCPP	0.0020	U	ug/L	P328838	
		Carbamazepine**	8.7E-04	I	ug/L	P328838	
		Triclopyr**	0.0040	U	ug/L	P328838	
		Primidone**	0.0040	U	ug/L	P328838	
		Fluridone**	4.0E-04	U	ug/L	P328838	

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: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 11:55**

Field ID: G4NW0401DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914614	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P328799	
	SM 2320 B-97	Total Alkalinity	8.0		mg CaCO3/L	P328972	
	SM 2540 D-97	TSS	4	IA	mg/L	P329299	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P329084	
1914618	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P329111	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P329048	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P329126	
1914622	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328790	

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: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 11:55**

Field ID: G4NW0401DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914641	EPA 8321B	Sucralose**	0.045		ug/L	P328764	

Field ID: G4NW0401DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914641	USGS O-2060-01	2,4-D	0.0074	I	ug/L	P328838	
		Diuron	8.0E-04	U	ug/L	P328838	
		Fenuron	0.0080	U	ug/L	P328838	
		Imidacloprid	0.0065		ug/L	P328838	MS
		Bentazon	0.0011	I	ug/L	P328838	
		Linuron	0.0040	U	ug/L	P328838	
		Acetaminophen**	0.0080	U	ug/L	P328838	
		MCPP	0.0020	U	ug/L	P328838	
		Carbamazepine**	9.4E-04	I	ug/L	P328838	
		Triclopyr**	0.0040	U	ug/L	P328838	
		Primidone**	0.0040	U	ug/L	P328838	
		Fluridone**	4.0E-04	U	ug/L	P328838	

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: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 12:00**

Field ID: FIELDBLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914615	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P328799	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P328972	
	SM 2540 D-97	TSS	5	I	mg/L	P329298	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P329084	
1914619	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P329111	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P329048	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P329126	
1914623	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P328790	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The sample was reanalyzed on 08/01/2017. The result was 0.2 UQ mg/L.

Sample Location: Blackwater Bay (South Segment) **Collection Date/Time: 07/18/2017 12:00**

Field ID: FIELDBLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914642	EPA 8321B	Sucralose**	0.010	U	ug/L	P328764	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P328838	
		Diuron	8.0E-04	U	ug/L	P328838	
		Fenuron	0.0080	U	ug/L	P328838	
		Imidacloprid	8.0E-04	U	ug/L	P328838	MS
		Bentazon	8.0E-04	U	ug/L	P328838	
		Linuron	0.0040	U	ug/L	P328838	
		Acetaminophen**	0.0080	U	ug/L	P328838	
		MCPP	0.0020	U	ug/L	P328838	
		Carbamazepine**	4.0E-04	U	ug/L	P328838	

Field ID: FIELDBLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914642	USGS O-2060-01	Triclopyr**	0.0040	U	ug/L	P328838	
		Primidone**	0.0040	U	ug/L	P328838	
		Fluridone**	4.0E-04	U	ug/L	P328838	

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: P328799

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329111

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328790

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

Reference Method: EPA 8321B
Batch ID: P328764

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P328764

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P328972

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

Reference Method: SM 2540 D-97
Batch ID: P329298

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329299

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329126

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

Reference Method: USGS O-2060-01
Batch ID: P328838

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329111

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328790

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328764

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P328972

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

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P329126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P328838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	40 - 150
Acetaminophen	99.9		P	30 - 150
Bentazon	103		P	40 - 150
Carbamazepine	120		P	40 - 150
Diuron	122		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	113		P	40 - 150
Imidacloprid	119		P	40 - 160
Linuron	112		P	40 - 150
MCPP	105		P	40 - 150
Primidone	97.7		P	40 - 150
Triclopyr	94.2		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914561	Ammonia-N	99.3	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914616	Kjeldahl Nitrogen	96.5	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914616	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914589	Total-P	99.4	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914562	O-Phosphate-P	98.2	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914622	O-Phosphate-P	97.9	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914460	Sucralose	98.8	99.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914940	Fluoride	99.4	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P329126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914491	Organic Carbon	96.6	96.2	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P328838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914598	Acetaminophen	128	132	P/P	30 - 150
1914598	Bentazon	56.7	61.2	P/P	40 - 150
1914598	Carbamazepine	118	124	P/P	40 - 150
1914598	Diuron	90.3	84.6	P/P	40 - 150
1914598	Fenuron	91.8	92.6	P/P	40 - 150
1914598	Fluridone	52.7	52.7	P/P	40 - 150
1914598	Imidacloprid	178	178	F/F	40 - 160
1914598	Linuron	84.8	84.8	P/P	40 - 150
1914598	MCPP	126	120	P/P	40 - 150
1914598	Primidone	102	115	P/P	40 - 150
1914598	Triclopyr	100	103	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914582	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914561	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914616	Kjeldahl Nitrogen	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914616	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914589	Total-P	0.897	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914562	O-Phosphate-P	1.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914622	O-Phosphate-P	0.611	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914460	Sucralose	0.371	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P328972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915059	Total Alkalinity	0.209	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914940	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P329126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914491	Organic Carbon	0.283	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P328838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914598	2,4-D	10.7	Spike	P	0 - 30
1914598	Acetaminophen	2.96	Spike	P	0 - 30
1914598	Bentazon	7.20	Spike	P	0 - 30
1914598	Carbamazepine	5.31	Spike	P	0 - 30
1914598	Diuron	4.57	Spike	P	0 - 30
1914598	Fenuron	0.846	Spike	P	0 - 30
1914598	Fluridone	0.0320	Spike	P	0 - 30
1914598	Imidacloprid	0.348	Spike	P	0 - 30
1914598	Linuron	0.0707	Spike	P	0 - 30
1914598	MCPP	5.08	Spike	P	0 - 30
1914598	Primidone	11.7	Spike	P	0 - 30
1914598	Triclopyr	3.23	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: 1914639
Field Sample ID: G4NW0402

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	65.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	142	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	146	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	136	P	30 - 160
USGS O-2060-01	Diuron-d6	104	P	30 - 160
USGS O-2060-01	Primidone-d5	144	P	30 - 160

Lab Sample ID: 1914640
Field Sample ID: G4NW0401

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	76.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	147	P	40 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 1914640
Field Sample ID: G4NW0401

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Acetaminophen-d4	148	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	143	P	30 - 160
USGS O-2060-01	Diuron-d6	97.4	P	30 - 160
USGS O-2060-01	Primidone-d5	133	P	30 - 160

Lab Sample ID: 1914641
Field Sample ID: G4NW0401DUPLICATE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	79.7	P	40 - 160
USGS O-2060-01	2,4-D-d3	149	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	124	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	128	P	30 - 160
USGS O-2060-01	Diuron-d6	112	P	30 - 160
USGS O-2060-01	Primidone-d5	137	P	30 - 160

Lab Sample ID: 1914642
Field Sample ID: FIELDBLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	99.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	96.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	126	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	96.7	P	30 - 160
USGS O-2060-01	Diuron-d6	117	P	30 - 160
USGS O-2060-01	Primidone-d5	125	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77817
Included Lab Sample IDs: 1914620, 1914621, 1914622, 1914623

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	99.1	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A77821
Included Lab Sample IDs: 1914612, 1914613, 1914614, 1914615

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77874
Included Lab Sample IDs: 1914616, 1914617, 1914618, 1914619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A77884
Included Lab Sample IDs: 1914612, 1914613, 1914614, 1914615

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77900
Included Lab Sample IDs: 1914616, 1914617, 1914618, 1914619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77923
Included Lab Sample IDs: 1914616, 1914617, 1914618, 1914619

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

Reference Method: SM 4500 F-C-97
Run ID: A77941
Included Lab Sample IDs: 1914612, 1914613, 1914614, 1914615

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

Reference Method: SM 5310 B-00
Run ID: A77952
Included Lab Sample IDs: 1914616, 1914617, 1914618, 1914619

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77995
Included Lab Sample IDs: 1914616, 1914617, 1914618, 1914619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.9	P/P	90 - 110
Kjeldahl Nitrogen	98.2	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A78008
Included Lab Sample IDs: 1914639, 1914640, 1914641, 1914642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.3	88.1	P/P	60 - 160
Sucralose	92.5	90.3	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A78113
Included Lab Sample IDs: 1914639, 1914640, 1914641, 1914642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	113	110	P/P	50 - 150
Acetaminophen	133	111	P/P	60 - 150
Bentazon	129	97.6	P/P	50 - 150
Carbamazepine	116	103	P/P	60 - 150
Diuron	128	119	P/P	60 - 150
Fenuron	128	115	P/P	60 - 150
Fluridone	124	106	P/P	60 - 160
Imidacloprid	116	113	P/P	60 - 150
Linuron	108	129	P/P	60 - 150
MCPP	110	108	P/P	50 - 150
Primidone	137	102	P/P	60 - 150
Triclopyr	107	87.2	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.92	
EPA 350.1 Rev. 2.0	Ammonia-N	102	99.3	101			1.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1	96.5	98.6			1.52
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106	106			0.0
EPA 365.1 Rev. 2.0	Total-P	98.1	99.4	98.1			0.897
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.2	100			1.82
	O-Phosphate-P	99.9	97.9	98.5			0.611
EPA 8321B	Sucralose	85.0	98.8	99.2			0.371
SM 2320 B-97	Total Alkalinity	103				0.209	
SM 4500 F-C-97	Fluoride	96.7	99.4	100			0.477
SM 5310 B-00	Organic Carbon	97.6	96.6	96.2			0.283
USGS O-2060-01	2,4-D	107					10.7
	Acetaminophen	99.9	128	132			2.96
	Bentazon	103	56.7	61.2			7.20
	Carbamazepine	120	124	118			5.31
	Diuron	122	84.6	90.3			4.57
	Fenuron	111	92.6	91.8			0.846
	Fluridone	113	52.7	52.7			0.0320
	Imidacloprid	119	178	178			0.348
	Linuron	112	84.8	84.8			0.0707
	MCPP	105	126	120			5.08
	Primidone	97.7	115	102			11.7
	Triclopyr	94.2	100	103			3.23

Reference Method Descriptions

Method / DoH Cert # **Description** **Associated Samples**

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1914612, 1914613, 1914614, 1914615
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1914616, 1914617, 1914618, 1914619
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1914616, 1914617, 1914618, 1914619
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1914616, 1914617, 1914618, 1914619
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1914616, 1914617, 1914618, 1914619
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1914620, 1914621, 1914622, 1914623
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1914639, 1914640, 1914641, 1914642
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1914612, 1914613, 1914614, 1914615
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1914612, 1914613, 1914614, 1914615
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1914612, 1914613, 1914614, 1914615
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1914616, 1914617, 1914618, 1914619
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1914639, 1914640, 1914641, 1914642
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1914639, 1914640, 1914641, 1914642

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	07/19/2017			07/19/2017 16:03	DeAsia Armster	1914612, 1914613, 1914614, 1914615
EPA 350.1 Rev. 2.0	07/19/2017			07/21/2017	Sofia Elnemr	1914616, 1914617, 1914618, 1914619
EPA 351.2 Rev. 2.0	07/19/2017	07/26/2017	Adrian Shelby	07/27/2017	Joseph Suarez	1914616, 1914617, 1914618, 1914619
EPA 353.2 Rev. 2.0	07/19/2017			07/25/2017	Beverly Y. Sanders	1914616, 1914617, 1914618, 1914619
EPA 365.1 Rev. 2.0	07/19/2017	07/21/2017	Vijayalakshmi Reddy	07/24/2017	Lipi Saha	1914616, 1914617, 1914618, 1914619
EPA 365.1 Rev. 2.0 dissolved	07/19/2017			07/19/2017 14:16	Lipi Saha	1914620
	07/19/2017			07/19/2017 14:17	Lipi Saha	1914621
	07/19/2017			07/19/2017 14:24	Lipi Saha	1914622
	07/19/2017			07/19/2017 14:27	Lipi Saha	1914623
EPA 8321B	07/19/2017	07/26/2017	Julie Michelle Frank	07/27/2017	Mohammad Ghaffari	1914639, 1914640, 1914641, 1914642
SM 2320 B-97	07/19/2017			07/22/2017	Dale L. Simmons	1914612, 1914613, 1914614, 1914615
SM 2540 D-97	07/19/2017			07/21/2017	Yijie Li	1914612, 1914613, 1914614, 1914615
SM 4500 F-C-97	07/19/2017			07/26/2017	Dale L. Simmons	1914612, 1914613, 1914614, 1914615
SM 5310 B-00	07/19/2017			07/25/2017	Ping Hua	1914616, 1914617, 1914618, 1914619
USGS O-2060-01	07/19/2017	07/21/2017	Hoor Shaik	07/30/2017	Juyoung Kim	1914639, 1914640, 1914641, 1914642