

Chemical Analysis Report

NW-DIST-2017-02-10-01

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

Event Description: **Blackwater Bay WBID 548GB 738**
Request ID: **RQ-2017-02-06-51**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-FEB-2017 15:48

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: TEXAR BAYOU

Collection Date/Time: 02/09/2017 10:30

Field ID: G4NW0402

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871858	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P319700	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P320107	
	SM 2540 D-97	TSS	10		mg/L	P319852	
	SM 4500 F-C-97	Fluoride	0.40		mg F/L	P320247	
1871860	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P320242	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P319974	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.47		mg N/L	P320027	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P319903	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P319723	
1871862	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P319704	

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: ESCAMBIA RIVER ABOVE HWY 90

Collection Date/Time: 02/09/2017 11:30

Field ID: G4NW0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871859	EPA 180.1 Rev. 2.0	Turbidity	11	A	NTU	P319700	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P320107	
	SM 2540 D-97	TSS	5	I	mg/L	P319852	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P320247	
1871861	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P320014	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P319766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P320166	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P319896	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P319723	
1871863	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P319702	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: TEXAR BAYOU

Collection Date/Time: 02/09/2017 10:30

Field ID: G4NW0402

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871870	EPA 8321B	Sucralose**	0.080		ug/L	P319661	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319620	
		Fenuron	0.0080	U	ug/L	P319620	
		Imidacloprid	0.0089	I	ug/L	P319620	
		Linuron	0.0040	U	ug/L	P319620	
		Acetaminophen**	0.0040	U	ug/L	P319620	
		Carbamazepine**	4.0E-04	U	ug/L	P319620	
		Primidone**	0.0080	U	ug/L	P319620	
		Fluridone**	4.0E-04	U	ug/L	P319620	

Ref. Method and Comment:

USGS O-2060-01: Bentazon = 0.0036 I ug/L and 2,4-D = 0.0082 I ug/L.

Sample Location: ESCAMBIA RIVER ABOVE HWY 90

Collection Date/Time: 02/09/2017 11:30

Field ID: G4NW0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871871	EPA 8321B	Sucralose**	0.080		ug/L	P319661	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319620	
		Fenuron	0.0080	U	ug/L	P319620	
		Imidacloprid	0.0040	U	ug/L	P319620	
		Linuron	0.0040	U	ug/L	P319620	
		Acetaminophen**	0.0040	U	ug/L	P319620	
		Carbamazepine**	4.0E-04	U	ug/L	P319620	
		Primidone**	0.0080	U	ug/L	P319620	
		Fluridone**	4.0E-04	U	ug/L	P319620	

Ref. Method and Comment:
 USGS O-2060-01: Bentazon = 0.0022 l ug/L.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319700

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320014

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320242

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319766

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319974

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320027

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320166

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319896

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319903

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319704

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

Reference Method: EPA 8321B
Batch ID: P319661

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P320107

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

Reference Method: SM 2540 D-97
Batch ID: P319852

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320247

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P319723

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

Reference Method: USGS O-2060-01
Batch ID: P319620

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: P320014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319766

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: P319974

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320166

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: P319896

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319702

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: P319704

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

Reference Method: EPA 8321B
Batch ID: P319661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	104		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P320107

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

Reference Method: SM 4500 F-C-97
Batch ID: P320247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P319723

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P319620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	102		P	40 - 140
Carbamazepine	125		P	40 - 140
Diuron	87.2		P	40 - 140
Fenuron	91.2		P	40 - 140
Fluridone	90.4		P	40 - 140
Imidacloprid	88.0		P	40 - 160
Linuron	90.4		P	40 - 140
Primidone	92.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872547	Ammonia-N	98.0	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871973	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872466	Kjeldahl Nitrogen	98.0	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871432	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871801	NO2NO3-N	107	105	P/P	90 - 110
1871801	NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871816	Total-P	95.9	99.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871860	Total-P	97.2	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871863	O-Phosphate-P	98.4	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871933	O-Phosphate-P	101	103	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P319661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872479	Sucralose	61.3	75.1	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P320247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871968	Fluoride	98.5	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P319723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871801	Organic Carbon	93.2	94.0	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P319620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871630	Acetaminophen	66.4	76.8	P/P	40 - 140
1871630	Carbamazepine	62.0	56.0	P/P	40 - 140
1871630	Diuron	47.2	44.8	P/P	40 - 140
1871630	Fenuron	50.8	52.4	P/P	40 - 140
1871630	Fluridone	62.2	56.6	P/P	40 - 140
1871630	Imidacloprid	101	108	P/P	40 - 160
1871630	Linuron	78.8	74.4	P/P	40 - 140
1871630	Primidone	57.6	61.6	P/P	40 - 140

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871859	Turbidity	0.930	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871823	Ammonia-N	0.0470	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872547	Ammonia-N	2.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871973	Kjeldahl Nitrogen	0.404	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872466	Kjeldahl Nitrogen	4.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871432	NO2NO3-N	1.93	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871801	NO2NO3-N	0.943	Spike	P	0 - 15

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871816	Total-P	2.53	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871860	Total-P	0.836	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871863	O-Phosphate-P	0.272	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871933	O-Phosphate-P	1.77	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P319661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872479	Sucralose	14.1	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P320107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871968	Total Alkalinity	0.306	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
 Batch ID: P320247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871968	Fluoride	0.506	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P319723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871801	Organic Carbon	0.548	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P319620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871630	Acetaminophen	14.5	Spike	P	0 - 30
1871630	Carbamazepine	10.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P319620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871630	Diuron	5.22	Spike	P	0 - 30
1871630	Fenuron	3.10	Spike	P	0 - 30
1871630	Fluridone	8.28	Spike	P	0 - 30
1871630	Imidacloprid	6.50	Spike	P	0 - 30
1871630	Linuron	5.74	Spike	P	0 - 30
1871630	Primidone	6.71	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: 1871870
 Field Sample ID: G4NW0402

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	95.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	66.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	57.4	P	40 - 160
USGS O-2060-01	Diuron-d6	48.4	P	40 - 150
USGS O-2060-01	Primidone-d5	120	P	40 - 150

Lab Sample ID: 1871871
 Field Sample ID: G4NW0009

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	104	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	85.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	76.4	P	40 - 160
USGS O-2060-01	Diuron-d6	64.0	P	40 - 150
USGS O-2060-01	Primidone-d5	125	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A74414
 Included Lab Sample IDs: 1871858, 1871859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	97.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A74416
 Included Lab Sample IDs: 1871862, 1871863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.3	P/P	90 - 110
O-Phosphate-P	99.4	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A74422

Included Lab Sample IDs: 1871860, 1871861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	95.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A74453

Included Lab Sample IDs: 1871870, 1871871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	92.0	100	P/P	60 - 150
Carbamazepine	104	106	P/P	60 - 150
Diuron	96.4	95.2	P/P	60 - 150
Fenuron	107	109	P/P	60 - 150
Fluridone	87.6	88.4	P/P	60 - 150
Imidacloprid	98.8	106	P/P	60 - 150
Linuron	105	91.6	P/P	60 - 150
Primidone	113	111	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74496

Included Lab Sample IDs: 1871861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A74502

Included Lab Sample IDs: 1871870, 1871871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.6	114	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74531

Included Lab Sample IDs: 1871860, 1871861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	100	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74538

Included Lab Sample IDs: 1871861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.0	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74547

Included Lab Sample IDs: 1871860

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74554

Included Lab Sample IDs: 1871860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74571

Included Lab Sample IDs: 1871858, 1871859

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74601

Included Lab Sample IDs: 1871861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74626

Included Lab Sample IDs: 1871858, 1871859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.0	P/P	90 - 110
Fluoride	98.0	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74627

Included Lab Sample IDs: 1871860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	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				0.930	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0				0.0470
	Ammonia-N	99.7	98.0	95.6		2.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	102	101		0.404
	Kjeldahl Nitrogen	101	98.0	103		4.12
EPA 353.2 Rev. 2.0	NO2NO3-N	103	102	104		1.93
	NO2NO3-N	104	107	106	105	0.943
EPA 365.1 Rev. 2.0	Total-P	93.1	95.9	99.0		2.53
	Total-P	97.2	97.2	96.4		0.836
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.4	98.7		0.272

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	101	103		
EPA 8321B	Sucralose	104	61.3	75.1		
SM 2320 B-97	Total Alkalinity	103				0.306
SM 4500 F-C-97	Fluoride	96.6	98.5	99.1		0.506
SM 5310 B-00	Organic Carbon	96.0	93.2	94.0		0.548
USGS O-2060-01	Acetaminophen	102	66.4	76.8		14.5
	Carbamazepine	125	62.0	56.0		10.2
	Diuron	87.2	47.2	44.8		5.22
	Fenuron	91.2	50.8	52.4		3.10
	Fluridone	90.4	62.2	56.6		8.28
	Imidacloprid	88.0	101	108		6.50
	Linuron	90.4	78.8	74.4		5.74
	Primidone	92.4	57.6	61.6		6.71

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1871858, 1871859
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1871860, 1871861
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1871860, 1871861
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1871860, 1871861
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1871860, 1871861
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1871862, 1871863
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1871870, 1871871
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1871858, 1871859
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1871858, 1871859
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1871858, 1871859
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1871860, 1871861
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1871870, 1871871

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	02/10/2017			02/10/2017 16:18	Julie Michelle Frank	1871858, 1871859
EPA 350.1 Rev. 2.0	02/10/2017			02/16/2017	Sofia Elnemr	1871861
	02/10/2017			02/21/2017	Sofia Elnemr	1871860
EPA 351.2 Rev. 2.0	02/10/2017	02/14/2017	Adrian Shelby	02/15/2017	Joseph Suarez	1871861
	02/10/2017	02/16/2017	Adrian Shelby	02/17/2017	Joseph Suarez	1871860
EPA 353.2 Rev. 2.0	02/10/2017			02/17/2017	Beverly Y. Sanders	1871860
	02/10/2017			02/21/2017	Beverly Y. Sanders	1871861
EPA 365.1 Rev. 2.0	02/10/2017	02/15/2017	Vijayalakshmi Reddy	02/16/2017	Lipi Saha	1871860, 1871861
EPA 365.1 Rev. 2.0 dissolved	02/10/2017			02/10/2017 16:38	Julia Storbeck	1871863
	02/10/2017			02/10/2017 17:09	Julia Storbeck	1871862
EPA 8321B	02/10/2017	02/14/2017	Mohammad Ghaffari	02/15/2017	Mohammad Ghaffari	1871870, 1871871
SM 2320 B-97	02/10/2017			02/19/2017	Dale L. Simmons	1871858, 1871859
SM 2540 D-97	02/10/2017			02/13/2017	Christopher Armour	1871858, 1871859
SM 4500 F-C-97	02/10/2017			02/22/2017	Dale L. Simmons	1871858, 1871859
SM 5310 B-00	02/10/2017			02/11/2017	Julie Michelle Frank	1871860, 1871861
USGS O-2060-01	02/10/2017	02/13/2017	Hoor Shaik	02/14/2017	Juyoung Kim	1871870, 1871871