

Chemical Analysis Report

NW-DIST-2017-07-20-02

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

Event Description: **98 Whaler Run WBID 917A 701A 937**

Request ID: **RQ-2017-07-17-34**

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, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 10-AUG-2017 11:57



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: Mack Bayou

Collection Date/Time: 07/19/2017 11:25

Field ID: G3NW0144

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914973	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P328872	
	SM 2320 B-97	Total Alkalinity	53	A	mg CaCO3/L	P328973	
	SM 2540 D-97	TSS	5	IA	mg/L	P329471	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P328979	
1914975	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P329096	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P328965	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P329207	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P328992	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P329125	
1914977	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329216	

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: East Bay River (Marine Portion)

Collection Date/Time: 07/19/2017 14:45

Field ID: G4NW0400

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915010	EPA 8321B	Sucralose**	0.054		ug/L	P328875	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P328845	
		Diuron	8.0E-04	U	ug/L	P328845	
		Fenuron	0.0080	U	ug/L	P328845	
		Imidacloprid	0.0014	I	ug/L	P328845	MS
		Bentazon	8.0E-04	U	ug/L	P328845	
		Linuron	0.0040	U	ug/L	P328845	
		Acetaminophen**	0.0080	U	ug/L	P328845	
		MCP	0.0020	U	ug/L	P328845	
		Carbamazepine**	4.0E-04	U	ug/L	P328845	
		Triclopyr**	0.0040	U	ug/L	P328845	
		Primidone**	0.0040	U	ug/L	P328845	
		Fluridone**	4.0E-04	U	ug/L	P328845	

Sample Location: Destin Harbor (West Side)

Collection Date/Time: 07/19/2017 12:45

Field ID: G3NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914974	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P328872	
	SM 2320 B-97	Total Alkalinity	66		mg CaCO3/L	P328973	
	SM 2540 D-97	TSS	3	U	mg/L	P329471	
	SM 4500 F-C-97	Fluoride	0.53		mg F/L	P328979	
1914976	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	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	0.005	I	mg N/L	P329208	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P328992	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P329125	

Field ID: G3NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914978	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329216	

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: Destin Harbor (West Side)

Collection Date/Time: 07/19/2017 12:45

Field ID: G3NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1915011	EPA 8321B	Sucralose**	0.49		ug/L	P328875	
	USGS O-2060-01	2,4-D	0.0057	I	ug/L	P328845	
		Diuron	0.0027	I	ug/L	P328845	
		Fenuron	0.0080	U	ug/L	P328845	
		Imidacloprid	0.0078		ug/L	P328845	MS
		Bentazon	0.0013	I	ug/L	P328845	
		Linuron	0.0040	U	ug/L	P328845	
		Acetaminophen**	0.0090	I	ug/L	P328845	
		MCPD	0.0020	U	ug/L	P328845	
		Carbamazepine**	7.8E-04	I	ug/L	P328845	
		Triclopyr**	0.0040	U	ug/L	P328845	
		Primidone**	0.0040	U	ug/L	P328845	
		Fluridone**	4.0E-04	U	ug/L	P328845	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P328872

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

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 353.2 Rev. 2.0

Batch ID: P329207

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: P329208

Component	Result	Code	Units
NO2NO3-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 dissolved
Batch ID: P329216

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

Reference Method: EPA 8321B
Batch ID: P328875

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P328973

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

Reference Method: SM 2540 D-97
Batch ID: P329471

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P328979

Component	Result	Code	Units
Fluoride	0.035	U	mg F/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: P328845

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: P328845

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 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 353.2 Rev. 2.0
Batch ID: P329207

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

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

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

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 dissolved
Batch ID: P329216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P328875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	87.3		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P328973

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

Reference Method: SM 4500 F-C-97
 Batch ID: P328979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

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

Reference Method: USGS O-2060-01
 Batch ID: P328845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Acetaminophen	120		P	30 - 150
Bentazon	102		P	40 - 150
Carbamazepine	119		P	40 - 150
Diuron	135		P	40 - 150
Fenuron	127		P	40 - 150
Fluridone	110		P	40 - 150
Imidacloprid	110		P	40 - 160
Linuron	133		P	40 - 150
MCPP	112		P	40 - 150
Primidone	133		P	40 - 150
Triclopyr	88.8		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 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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914892	NO2NO3-N	104	102	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 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 dissolved
Batch ID: P329216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914977	O-Phosphate-P	95.3	96.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914767	Sucralose	107	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P328979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914973	Fluoride	98.7	100	P/P	91 - 105

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: P328845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914766	2,4-D	133	102	P/P	40 - 150
1914766	Acetaminophen	146	144	P/P	30 - 150
1914766	Bentazon	95.0	91.1	P/P	40 - 150
1914766	Carbamazepine	123	122	P/P	40 - 150
1914766	Diuron	124	106	P/P	40 - 150
1914766	Fenuron	104	107	P/P	40 - 150
1914766	Fluridone	112	106	P/P	40 - 150
1914766	Imidacloprid	165	143	F/P	40 - 160
1914766	Linuron	88.5	118	P/P	40 - 150
1914766	MCP	114	101	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P328845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914766	Primidone	128	116	P/P	40 - 150
1914766	Triclopyr	104	96.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914739	Turbidity	1.87	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 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 353.2 Rev. 2.0
Batch ID: P329207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914892	NO2NO3-N	1.45	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
1915029	NO2NO3-N	0.971	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

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P329216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914977	O-Phosphate-P	0.836	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P328875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914767	Sucralose	5.95	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P328973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914973	Total Alkalinity	0.962	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
 Batch ID: P328979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914973	Fluoride	1.01	Spike	P	0 - 3.0

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: P328845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914766	2,4-D	25.8	Spike	P	0 - 30
1914766	Acetaminophen	1.21	Spike	P	0 - 30
1914766	Bentazon	4.17	Spike	P	0 - 30
1914766	Carbamazepine	0.933	Spike	P	0 - 30
1914766	Diuron	15.8	Spike	P	0 - 30
1914766	Fenuron	2.84	Spike	P	0 - 30
1914766	Fluridone	5.02	Spike	P	0 - 30
1914766	Imidacloprid	14.3	Spike	P	0 - 30
1914766	Linuron	28.7	Spike	P	0 - 30
1914766	MCP	11.5	Spike	P	0 - 30
1914766	Primidone	9.22	Spike	P	0 - 30
1914766	Triclopyr	7.14	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: 1915010
 Field Sample ID: G4NW0400

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	79.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	139	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	150	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	102	P	30 - 160
USGS O-2060-01	Diuron-d6	77.3	P	30 - 160
USGS O-2060-01	Primidone-d5	120	P	30 - 160

Lab Sample ID: 1915011
 Field Sample ID: G3NW0127

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	130	P	40 - 160
USGS O-2060-01	2,4-D-d3	137	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	134	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	134	P	30 - 160
USGS O-2060-01	Diuron-d6	93.7	P	30 - 160
USGS O-2060-01	Primidone-d5	133	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A77845
 Included Lab Sample IDs: 1914977, 1914978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	97.2	P/P	90 - 110
O-Phosphate-P	97.2	96.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A77849
 Included Lab Sample IDs: 1914973, 1914974

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

Reference Method: SM 2320 B-97
 Run ID: A77884
 Included Lab Sample IDs: 1914973, 1914974

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

Reference Method: SM 4500 F-C-97
 Run ID: A77884
 Included Lab Sample IDs: 1914973, 1914974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	107	99.5	P/P	90 - 110
Fluoride	99.0	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77945
Included Lab Sample IDs: 1914975, 1914976

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

Reference Method: SM 5310 B-00
Run ID: A77952
Included Lab Sample IDs: 1914975, 1914976

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: 1914975, 1914976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77987
Included Lab Sample IDs: 1914975, 1914976

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77988
Included Lab Sample IDs: 1914975, 1914976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A78008
Included Lab Sample IDs: 1915010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.4	77.0	P/P	60 - 160

Reference Method: USGS O-2060-01
Run ID: A78113
Included Lab Sample IDs: 1915010, 1915011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	130	P/P	50 - 150
Acetaminophen	134	122	P/P	60 - 150
Bentazon	105	119	P/P	50 - 150
Carbamazepine	111	117	P/P	60 - 150
Diuron	117	108	P/P	60 - 150
Fenuron	120	118	P/P	60 - 150
Fluridone	109	113	P/P	60 - 160
Imidacloprid	115	104	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78113

Included Lab Sample IDs: 1915010, 1915011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	119	109	P/P	60 - 150
MCP	111	112	P/P	50 - 150
Primidone	90.9	126	P/P	60 - 150
Triclopyr	97.2	106	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A78247

Included Lab Sample IDs: 1915011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.9	116	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				1.87	
EPA 350.1 Rev. 2.0	Ammonia-N	100	105 93.3			10.1
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	100 97.1			2.84
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104 102			1.45
	NO ₂ NO ₃ -N	103	104 102			0.971
EPA 365.1 Rev. 2.0	Total-P	93.9	101 99.6			1.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	95.3 96.1			0.836
EPA 8321B	Sucralose	87.3	107 101			5.95
SM 2320 B-97	Total Alkalinity	103			0.962	
SM 4500 F-C-97	Fluoride	95.9	98.7 100			1.01
SM 5310 B-00	Organic Carbon	98.6	93.7 92.1			1.43
USGS O-2060-01	2,4-D	113	133 102			25.8
	Acetaminophen	120	146 144			1.21
	Bentazon	102	95.0 91.1			4.17
	Carbamazepine	119	123 122			0.933
	Diuron	135	124 106			15.8
	Fenuron	127	104 107			2.84
	Fluridone	110	112 106			5.02
	Imidacloprid	110	165 143			14.3
	Linuron	133	88.5 118			28.7
	MCP	112	114 101			11.5
	Primidone	133	128 116			9.22
	Triclopyr	88.8	104 96.9			7.14

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1914973, 1914974
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1914975, 1914976
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1914975, 1914976
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1914975, 1914976
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1914975, 1914976
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1914977, 1914978
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1915010, 1915011
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1914973, 1914974
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1914973, 1914974
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1914973, 1914974
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1914975, 1914976
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1915010, 1915011
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1915010, 1915011

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	07/20/2017			07/20/2017 15:32	DeAsia Armster	1914973, 1914974
EPA 350.1 Rev. 2.0	07/20/2017			07/25/2017	Sofia Elnemr	1914975, 1914976
EPA 351.2 Rev. 2.0	07/20/2017	07/24/2017	Adrian Shelby	07/27/2017	Joseph Suarez	1914975, 1914976
EPA 353.2 Rev. 2.0	07/20/2017			07/27/2017	Beverly Y. Sanders	1914975, 1914976
EPA 365.1 Rev. 2.0	07/20/2017	07/24/2017	Vijayalakshmi Reddy	07/26/2017	Lipi Saha	1914975, 1914976
EPA 365.1 Rev. 2.0 dissolved	07/20/2017			07/20/2017 12:01	Ping Hua	1914977
	07/20/2017			07/20/2017 12:11	Ping Hua	1914978
EPA 8321B	07/20/2017	07/26/2017	Julie Michelle Frank	07/27/2017	Mohammad Ghaffari	1915010
	07/20/2017	07/26/2017	Julie Michelle Frank	08/04/2017	Mohammad Ghaffari	1915011
SM 2320 B-97	07/20/2017			07/22/2017	Dale L. Simmons	1914973, 1914974
SM 2540 D-97	07/20/2017			07/24/2017	DeAsia Armster	1914973, 1914974
SM 4500 F-C-97	07/20/2017			07/22/2017	Dale L. Simmons	1914973, 1914974
SM 5310 B-00	07/20/2017			07/25/2017	Ping Hua	1914975, 1914976
USGS O-2060-01	07/20/2017	07/24/2017	Hoor Shaik	07/30/2017	Juyoung Kim	1915010, 1915011