

Chemical Analysis Report

NE-DIST-2017-10-12-01

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

Event Description: **LSJR DowntownSalt**

Request ID: **RQ-2017-10-09-08**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 06-NOV-2017 14:13



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: Pottsburg Cr. @ Beach Blvd

Collection Date/Time: 10/11/2017 08:45

Field ID: G2NE0823 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936386	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P333289	
	EPA 300.0 Rev. 2.1	Sulfate	15		mg SO4/L	P333334	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P333705	
	SM 2540 D-97	TSS	2	I	mg/L	P333556	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P333709	
1936391	EPA 350.1 Rev. 2.0	Ammonia-N	0.082		mg N/L	P333534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P333647	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P333775	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P333896	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P333900	
1936396	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P333316	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Big Fishweir Cr. @ Herschel St.

Collection Date/Time: 10/11/2017 09:30

Field ID: G2NE0146 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936387	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P333289	
	EPA 300.0 Rev. 2.1	Sulfate	20		mg SO4/L	P333334	
	SM 2320 B-97	Total Alkalinity	113		mg CaCO3/L	P333705	
	SM 2540 D-97	TSS	2	I	mg/L	P333556	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P333709	
1936392	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P333534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P333647	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P333775	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P333896	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333900	
1936397	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P333316	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Ortega R Br @ Timuquana Rd.

Collection Date/Time: 10/11/2017 10:00

Field ID: G2NE0086 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936388	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P333289	
	EPA 300.0 Rev. 2.1	Sulfate	5.7		mg SO4/L	P333335	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P333705	
	SM 2540 D-97	TSS	2	UA	mg/L	P333556	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P333709	
1936393	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P333534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P333647	

Field ID: G2NE0086 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936393	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P333776	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P333896	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P333686	
1936398	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.079		mg P/L	P333316	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Ortega R Br @ Timuquana Rd.

Collection Date/Time: 10/11/2017 10:00

Field ID: G2NE0086 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936426	EPA 8321B	Sucralose**	0.091		ug/L	P333231	
	USGS O-2060-01	2,4-D	0.017		ug/L	P333253	
		Diuron	0.015		ug/L	P333253	
		Fenuron	0.0080	U	ug/L	P333253	
		Imidacloprid	0.043		ug/L	P333253	
		Bentazon	0.0063		ug/L	P333253	
		Linuron	0.0040	U	ug/L	P333253	
		Acetaminophen**	0.0080	U	ug/L	P333253	
		MCP	0.0020	U	ug/L	P333253	
		Carbamazepine**	4.0E-04	U	ug/L	P333253	
		Triclopyr**	0.0040	U	ug/L	P333253	
		Primidone**	0.0040	U	ug/L	P333253	
		Fluridone**	0.0093		ug/L	P333253	

Ref. Method and Comment:

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

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Goodbys Creek @ Sanchez Rd.

Collection Date/Time: 10/11/2017 10:40

Field ID: G2NE0601 10112017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936389	EPA 180.1 Rev. 2.0	Turbidity	5.6	A	NTU	P333290	
	EPA 300.0 Rev. 2.1	Sulfate	16		mg SO4/L	P333335	
	SM 2320 B-97	Total Alkalinity	106		mg CaCO3/L	P333705	
	SM 2540 D-97	TSS	3	I	mg/L	P333556	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P333709	
1936394	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P333534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P333649	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P333776	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P333896	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333686	
1936399	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P333316	

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: FIELD BLANK 10112017

Collection Date/Time: 10/11/2017 08:55

Field ID: FIELD BLANK 10112017

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936390	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P333290	
	EPA 300.0 Rev. 2.1	Sulfate	0.20	U	mg SO4/L	P333335	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P333705	
	SM 2540 D-97	TSS	2	U	mg/L	P333556	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P333709	
1936395	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P333534	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P333649	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333776	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P333896	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P333686	
1936400	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P333318	

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: The result was confirmed on 10/24/2017.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P333289

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P333290

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333334

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333335

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333534

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P333647

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333649

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333775

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333776

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333896

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333316

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333318

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

Reference Method: EPA 8321B
Batch ID: P333231

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P333705

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

Reference Method: SM 2540 D-97
Batch ID: P333556

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P333709

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333686

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

Reference Method: SM 5310 B-00
Batch ID: P333900

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

Reference Method: USGS O-2060-01
Batch ID: P333253

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
MCP	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 300.0 Rev. 2.1
Batch ID: P333334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333534

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333647

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333649

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333775

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: P333776

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: P333896

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333316

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: P333318

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

Reference Method: EPA 8321B
Batch ID: P333231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	91.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333705

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P333709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333686

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

Reference Method: SM 5310 B-00
Batch ID: P333900

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

Reference Method: USGS O-2060-01
Batch ID: P333253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.8		P	40 - 150
Acetaminophen	125		P	30 - 150
Bentazon	80.3		P	30 - 150
Carbamazepine	126		P	40 - 150
Diuron	114		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	119		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	120		P	40 - 150
MCP	82.8		P	40 - 150
Primidone	108		P	40 - 150
Triclopyr	77.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936193	Sulfate	92.3		P	90 - 110
1936352	Sulfate	93.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936427	Sulfate	93.2		P	90 - 110
1936581	Sulfate	92.1		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936348	Ammonia-N	99.9	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936428	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936294	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936393	NO2NO3-N	101	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936392	Total-P	95.7	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936195	O-Phosphate-P	96.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936349	O-Phosphate-P	94.9	95.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P333231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936514	Sucralose	40.3	41.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936581	Fluoride	97.6	98.3	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P333686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936276	Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P333900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935772	Organic Carbon	96.6	99.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936357	Acetaminophen	113	105	P/P	30 - 150
1936357	Carbamazepine	124	128	P/P	40 - 150
1936357	Diuron	84.3	83.1	P/P	40 - 150
1936357	Fenuron	102	102	P/P	40 - 150
1936357	Linuron	109	108	P/P	40 - 150
1936357	MCPD	58.2	57.7	P/P	40 - 150
1936357	Primidone	109	109	P/P	40 - 150
1936357	Triclopyr	67.1	60.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936284	Turbidity	1.18	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936389	Turbidity	6.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936193	Sulfate	0.0546	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936581	Sulfate	0.164	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936348	Ammonia-N	2.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936343	Kjeldahl Nitrogen	4.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936428	Kjeldahl Nitrogen	2.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936294	NO2NO3-N	0.635	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936393	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936392	Total-P	0.904	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936195	O-Phosphate-P	4.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936349	O-Phosphate-P	1.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P333231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936514	Sucralose	1.76	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P333705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936581	Total Alkalinity	0.706	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
 Batch ID: P333709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936581	Fluoride	0.511	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P333686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936276	Organic Carbon	0.762	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P333900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935772	Organic Carbon	3.06	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P333253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936357	2,4-D	1.19	Spike	P	0 - 30
1936357	Acetaminophen	6.83	Spike	P	0 - 30
1936357	Bentazon	1.22	Spike	P	0 - 30
1936357	Carbamazepine	3.34	Spike	P	0 - 30
1936357	Diuron	1.18	Spike	P	0 - 30
1936357	Fenuron	0.0976	Spike	P	0 - 30
1936357	Fluridone	26.5	Spike	P	0 - 30
1936357	Imidacloprid	3.73	Spike	P	0 - 30
1936357	Linuron	0.0737	Spike	P	0 - 30
1936357	MCP	0.794	Spike	P	0 - 30
1936357	Primidone	0.370	Spike	P	0 - 30
1936357	Triclopyr	9.94	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: 1936426
Field Sample ID: G2NE0086 10112017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	117	P	30 - 160
EPA 8321B	Diuron-d6	85.1	P	30 - 160
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	61.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	86.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	117	P	30 - 160
USGS O-2060-01	Diuron-d6	85.1	P	30 - 160
USGS O-2060-01	Primidone-d5	120	P	30 - 160
USGS O-2060-01	Sucralose-d6	61.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79517
Included Lab Sample IDs: 1936386, 1936387, 1936388, 1936389, 1936390

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79529
Included Lab Sample IDs: 1936396, 1936397, 1936398, 1936399, 1936400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.4	P/P	90 - 110
O-Phosphate-P	99.7	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79534
Included Lab Sample IDs: 1936386, 1936387, 1936388, 1936389, 1936390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	96.9	99.1	P/P	90 - 110
Sulfate	98.7	96.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A79623
Included Lab Sample IDs: 1936391, 1936392, 1936393, 1936394, 1936395

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A79651
Included Lab Sample IDs: 1936391, 1936392, 1936393, 1936394, 1936395

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79651

Included Lab Sample IDs: 1936391, 1936392, 1936393, 1936394, 1936395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79660

Included Lab Sample IDs: 1936393, 1936394, 1936395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	97.8	P/P	90 - 110
Organic Carbon	97.8	97.6	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A79661

Included Lab Sample IDs: 1936426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	111	109	P/P	50 - 150
Acetaminophen	112	112	P/P	60 - 150
Bentazon	129	127	P/P	50 - 150
Carbamazepine	113	115	P/P	60 - 150
Diuron	104	105	P/P	60 - 150
Fenuron	107	109	P/P	60 - 150
Fluridone	115	116	P/P	60 - 160
Imidacloprid	106	101	P/P	60 - 150
Linuron	103	117	P/P	60 - 150
MCPP	99.9	99.6	P/P	50 - 150
Primidone	104	108	P/P	60 - 150
Triclopyr	99.0	104	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A79666

Included Lab Sample IDs: 1936386, 1936387, 1936388, 1936389, 1936390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79666

Included Lab Sample IDs: 1936386, 1936387, 1936388, 1936389, 1936390

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

Reference Method: EPA 8321B

Run ID: A79673

Included Lab Sample IDs: 1936426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.1	91.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79748

Included Lab Sample IDs: 1936391, 1936392, 1936393, 1936394, 1936395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110
Kjeldahl Nitrogen	97.8	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79756

Included Lab Sample IDs: 1936391, 1936392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.7	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79781

Included Lab Sample IDs: 1936391, 1936392, 1936393, 1936394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	99.4	P/P	90 - 110
Total-P	99.4	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79802

Included Lab Sample IDs: 1936395

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.18	
	Turbidity				6.55	
EPA 300.0 Rev. 2.1	Sulfate	93.3	92.3 93.2		0.0546	
	Sulfate	92.6	92.1 93.2		0.164	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.9 96.8			2.82
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105				4.33
	Kjeldahl Nitrogen	104	104 102			2.34
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102 100			0.635
	NO2NO3-N	104	101 99.6			0.957
EPA 365.1 Rev. 2.0	Total-P	100	95.7 97.1			0.904
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.3 101			4.17
	O-Phosphate-P	99.6	94.9 95.9			1.05
EPA 8321B	Sucralose	91.6	40.3 41.0			1.76
SM 2320 B-97	Total Alkalinity	102			0.706	
SM 4500 F-C-97	Fluoride	97.9	97.6 98.3			0.511
SM 5310 B-00	Organic Carbon	96.8	102			0.762

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 5310 B-00	Organic Carbon	96.6	96.6	99.6		3.06
USGS O-2060-01	2,4-D	88.8				1.19
	Acetaminophen	125	113	105		6.83
	Bentazon	80.3				1.22
	Carbamazepine	126	124	128		3.34
	Diuron	114	84.3	83.1		1.18
	Fenuron	116	102	102		0.0976
	Fluridone	119				26.5
	Imidacloprid	102				3.73
	Linuron	120	109	108		0.0737
	MCP	82.8	58.2	57.7		0.794
	Primidone	108	109	109		0.370
	Triclopyr	77.2	67.1	60.8		9.94

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1936386, 1936387, 1936388, 1936389, 1936390
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1936386, 1936387, 1936388, 1936389, 1936390
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1936391, 1936392, 1936393, 1936394, 1936395
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1936391, 1936392, 1936393, 1936394, 1936395
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1936391, 1936392, 1936393, 1936394, 1936395
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1936391, 1936392, 1936393, 1936394, 1936395
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1936396, 1936397, 1936398, 1936399, 1936400
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1936426
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1936386, 1936387, 1936388, 1936389, 1936390
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1936386, 1936387, 1936388, 1936389, 1936390
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1936386, 1936387, 1936388, 1936389, 1936390
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1936391, 1936392, 1936393, 1936394, 1936395
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1936426
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1936426

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	10/12/2017			10/12/2017 16:03	DeAsia Armster	1936386, 1936387, 1936388, 1936389, 1936390
EPA 300.0 Rev. 2.1	10/12/2017			10/13/2017	Julia Storbeck	1936386, 1936387, 1936388, 1936389, 1936390
EPA 350.1 Rev. 2.0	10/12/2017			10/17/2017	Sofia Elnemr	1936391, 1936392, 1936393, 1936394, 1936395
EPA 351.2 Rev. 2.0	10/12/2017	10/19/2017	Adrian Shelby	10/23/2017	Tanya Welborn	1936391, 1936392, 1936393, 1936394, 1936395
EPA 353.2 Rev. 2.0	10/12/2017			10/18/2017	Beverly Y. Sanders	1936391, 1936392, 1936393, 1936394, 1936395
EPA 365.1 Rev. 2.0	10/12/2017	10/24/2017	Sima Feizi	10/25/2017	Lipi Saha	1936391, 1936392, 1936393, 1936394, 1936395
EPA 365.1 Rev. 2.0 dissolved	10/12/2017			10/12/2017 16:06	Megan Treadwell	1936396
	10/12/2017			10/12/2017 16:11	Megan Treadwell	1936397
	10/12/2017			10/12/2017 16:12	Megan Treadwell	1936398
	10/12/2017			10/12/2017 16:13	Megan Treadwell	1936399
	10/12/2017			10/12/2017 16:14	Megan Treadwell	1936400
EPA 8321B	10/12/2017	10/18/2017	Juyoung Kim	10/19/2017	Juyoung Kim	1936426
SM 2320 B-97	10/12/2017			10/19/2017	Dale L. Simmons	1936386, 1936387, 1936388, 1936389, 1936390
SM 2540 D-97	10/12/2017			10/16/2017	DeAsia Armster	1936386, 1936387, 1936388, 1936389, 1936390
SM 4500 F-C-97	10/12/2017			10/19/2017	Dale L. Simmons	1936386, 1936387, 1936388, 1936389, 1936390
SM 5310 B-00	10/12/2017			10/19/2017	Ping Hua	1936393, 1936394, 1936395
	10/12/2017			10/24/2017	Ping Hua	1936391, 1936392
USGS O-2060-01	10/12/2017	10/16/2017	Hoor Shaik	10/20/2017	Julie Michelle Frank	1936426