

Chemical Analysis Report

NE-DIST-2017-12-19-01

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

Event Description: **LSJR SW**
Request ID: **RQ-2017-12-04-27**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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

Date Certified: 05-JAN-2018 16:09

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: LITTLE BLACK CREEK @ SR 220

Collection Date/Time: 12/18/2017 10:15

Field ID: G2NE0626 12042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954845	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P337218	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P337390	
		Sulfate	8.1		mg SO4/L	P337394	
	SM 2120 B	Color (true)	150		PCU	P337223	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P337380	
	SM 2540 C-97	TDS	105		mg/L	P337495	
	SM 2540 D-97	TSS	4	I	mg/L	P337662	
	SM 4500 F-C-97	Fluoride	0.048	I	mg F/L	P337383	
1954847	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P337715	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P337453	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P337349	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P337363	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P337322	
1954849	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P337262	

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: LITTLE BLACK CREEK @ SR 220

Collection Date/Time: 12/18/2017 10:15

Field ID: G2NE0626 12042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954868	EPA 8321B	Sucralose**	1.3		ug/L	P336877	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337156	
		Diuron	0.0060		ug/L	P337156	
		Fenuron	0.0080	U	ug/L	P337156	
		Imidacloprid	0.078		ug/L	P337156	
		Bentazon	0.022		ug/L	P337156	
		Linuron	0.0040	U	ug/L	P337156	
		Acetaminophen**	0.0080	U	ug/L	P337156	
		MCPD	0.0020	U	ug/L	P337156	
		Carbamazepine**	0.0025		ug/L	P337156	
		Triclopyr**	0.0040	U	ug/L	P337156	
		Primidone**	0.0074	I	ug/L	P337156	
		Fluridone**	0.0080		ug/L	P337156	

Sample Location: GROG BRANCH @ SR 220

Collection Date/Time: 12/18/2017 11:00

Field ID: G2NE0674 12042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954846	EPA 180.1 Rev. 2.0	Turbidity	7.7	A	NTU	P337219	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P337390	
		Sulfate	4.7		mg SO4/L	P337394	
	SM 2120 B	Color (true)	190		PCU	P337224	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P337380	

Field ID: G2NE0674 12042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954846	SM 2540 C-97	TDS	101		mg/L	P337495	
	SM 2540 D-97	TSS	4	I	mg/L	P337662	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P337383	
1954848	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P337636	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P337329	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P337350	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P337363	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P337322	
1954850	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P337262	

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: GROG BRANCH @ SR 220

Collection Date/Time: 12/18/2017 11:00

Field ID: G2NE0674 12042017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1954869	EPA 8321B	Sucralose**	0.096		ug/L	P336877	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337156	
		Diuron	9.4E-04	I	ug/L	P337156	
		Fenuron	0.0080	U	ug/L	P337156	
		Imidacloprid	0.022		ug/L	P337156	
		Bentazon	0.014		ug/L	P337156	
		Linuron	0.0040	U	ug/L	P337156	
		Acetaminophen**	0.0080	U	ug/L	P337156	
		MCP	0.0020	U	ug/L	P337156	
		Carbamazepine**	4.0E-04	U	ug/L	P337156	
		Triclopyr**	0.0040	U	ug/L	P337156	
		Primidone**	0.0040	U	ug/L	P337156	
		Fluridone**	4.0E-04	U	ug/L	P337156	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P337218

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P337219

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P337390

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337390

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337394

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337636

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337715

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337329

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337453

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337349

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337350

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337363

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337262

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

Reference Method: EPA 8321B
Batch ID: P336877

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P337223

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P337224

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P337380

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

Reference Method: SM 2540 C-97
Batch ID: P337495

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P337662

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P337322

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P337156

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
MCPD	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: P337390

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337394

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337636

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337329

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337453

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337349

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: P337350

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: P337363

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337262

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

Reference Method: EPA 8321B
Batch ID: P336877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	87.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P337380

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P337383

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

Reference Method: SM 5310 B-00
Batch ID: P337322

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

Reference Method: USGS O-2060-01
Batch ID: P337156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	95.0		P	30 - 150
Bentazon	94.6		P	30 - 150
Carbamazepine	98.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P337156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	83.7		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	100		P	40 - 150
Imidacloprid	99.8		P	40 - 160
Linuron	90.5		P	40 - 150
MCPP	93.3		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	90.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954884	Chloride	101		P	90 - 110
1954902	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954884	Sulfate	100		P	90 - 110
1954902	Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954727	Ammonia-N	97.9	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954847	Ammonia-N	98.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954905	Kjeldahl Nitrogen	104	114	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955586	Kjeldahl Nitrogen	99.2	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954731	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954848	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954253	Total-P	99.5	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954710	O-Phosphate-P	95.2	95.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P336877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1953431	Sucralose	64.2	64.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P337383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954981	Fluoride	96.6	95.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P337322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954253	Organic Carbon	97.6	99.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P337156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954940	2,4-D	82.6	99.4	P/P	40 - 150
1954940	Acetaminophen	111	114	P/P	30 - 150
1954940	Bentazon	53.1	59.6	P/P	30 - 150
1954940	Carbamazepine	96.3	95.0	P/P	40 - 150
1954940	Diuron	80.0	76.1	P/P	40 - 150
1954940	Fenuron	88.8	90.0	P/P	40 - 150
1954940	Fluridone	79.9	77.0	P/P	40 - 150
1954940	Imidacloprid	157	155	P/P	40 - 160
1954940	Linuron	85.5	76.0	P/P	40 - 150
1954940	MCP	65.6	72.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P337156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954940	Primidone	101	110	P/P	40 - 150
1954940	Triclopyr	62.5	71.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954724	Turbidity	3.77	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954846	Turbidity	1.82	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954884	Chloride	1.93	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954884	Sulfate	2.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954727	Ammonia-N	0.610	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954847	Ammonia-N	2.17	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954905	Kjeldahl Nitrogen	8.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955586	Kjeldahl Nitrogen	1.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954731	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954848	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954253	Total-P	5.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954710	O-Phosphate-P	0.433	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P336877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1953431	Sucralose	0.230	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P337223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954724	Color (true)	0.406	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P337224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954875	Color (true)	2.72	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P337380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954981	Total Alkalinity	0.591	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P337495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954876	TDS	8.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P337383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954981	Fluoride	0.986	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P337322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954253	Organic Carbon	1.72	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P337156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954940	2,4-D	12.8	Spike	P	0 - 30
1954940	Acetaminophen	2.56	Spike	P	0 - 30
1954940	Bentazon	7.08	Spike	P	0 - 30
1954940	Carbamazepine	1.30	Spike	P	0 - 30
1954940	Diuron	4.61	Spike	P	0 - 30
1954940	Fenuron	1.32	Spike	P	0 - 30
1954940	Fluridone	3.18	Spike	P	0 - 30
1954940	Imidacloprid	1.02	Spike	P	0 - 30
1954940	Linuron	11.7	Spike	P	0 - 30
1954940	MCCP	9.42	Spike	P	0 - 30
1954940	Primidone	8.67	Spike	P	0 - 30
1954940	Triclopyr	14.0	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: 1954868
Field Sample ID: G2NE0626 12042017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	131	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	104	P	30 - 160
EPA 8321B	Primidone-d5	121	P	30 - 160
EPA 8321B	Sucralose-d6	62.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	99.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	131	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	116	P	30 - 160
USGS O-2060-01	Diuron-d6	104	P	30 - 160
USGS O-2060-01	Primidone-d5	121	P	30 - 160
USGS O-2060-01	Sucralose-d6	62.1	P	40 - 160

Lab Sample ID: 1954869
Field Sample ID: G2NE0674 12042017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.2	P	30 - 160
EPA 8321B	Diuron-d6	86.7	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	54.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	100	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	101	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	98.2	P	30 - 160
USGS O-2060-01	Diuron-d6	86.7	P	30 - 160
USGS O-2060-01	Primidone-d5	101	P	30 - 160
USGS O-2060-01	Sucralose-d6	54.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81014
Included Lab Sample IDs: 1954845, 1954846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A81015
Included Lab Sample IDs: 1954845, 1954846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	99.8	P/P	85 - 115
Color (true)	99.1	100	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81037

Included Lab Sample IDs: 1954849, 1954850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	98.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81055

Included Lab Sample IDs: 1954868, 1954869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.4	81.5	P/P	60 - 150
Sucralose	90.1	85.4	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A81056

Included Lab Sample IDs: 1954847, 1954848

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81066

Included Lab Sample IDs: 1954847, 1954848

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

Reference Method: SM 2320 B-97

Run ID: A81083

Included Lab Sample IDs: 1954845, 1954846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81083

Included Lab Sample IDs: 1954845, 1954846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81087

Included Lab Sample IDs: 1954845, 1954846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	106	P/P	90 - 110
Sulfate	100	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A81093

Included Lab Sample IDs: 1954868, 1954869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.8	102	P/P	50 - 150
Acetaminophen	102	103	P/P	60 - 150
Bentazon	103	102	P/P	50 - 150
Carbamazepine	105	106	P/P	60 - 150
Diuron	101	108	P/P	60 - 150
Fenuron	105	104	P/P	60 - 150
Fluridone	106	106	P/P	60 - 160
Imidacloprid	102	95.1	P/P	60 - 150
Linuron	101	106	P/P	60 - 150
MCPP	99.2	97.6	P/P	50 - 150
Primidone	95.0	104	P/P	60 - 150
Triclopyr	94.2	91.2	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81105

Included Lab Sample IDs: 1954848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81111

Included Lab Sample IDs: 1954847, 1954848

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81138

Included Lab Sample IDs: 1954847

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81195

Included Lab Sample IDs: 1954848

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81230

Included Lab Sample IDs: 1954847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				3.77	
	Turbidity				1.82	
EPA 300.0 Rev. 2.1	Chloride	101	101	98.8	1.93	
	Sulfate	97.4	100	95.7	2.92	
EPA 350.1 Rev. 2.0	Ammonia-N	97.1	97.9	98.5		0.610
	Ammonia-N	98.5	98.5	101		2.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	104	114		8.46
	Kjeldahl Nitrogen	104	99.2	101		1.55
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101	100		0.995
	NO2NO3-N	104	102	102		0.0
EPA 365.1 Rev. 2.0	Total-P	101	99.5	94.0		5.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1	95.2	95.7		0.433
EPA 8321B	Sucralose	87.8	64.2	64.3		0.230
SM 2120 B	Color (true)				0.406	
	Color (true)				2.72	
SM 2320 B-97	Total Alkalinity	100			0.591	
SM 2540 C-97	TDS				8.22	
SM 4500 F-C-97	Fluoride	96.7	96.6	95.2		0.986
SM 5310 B-00	Organic Carbon	98.2	97.6	99.4		1.72
USGS O-2060-01	2,4-D	103	99.4	82.6		12.8
	Acetaminophen	95.0	111	114		2.56
	Bentazon	94.6	59.6	53.1		7.08
	Carbamazepine	98.5	96.3	95.0		1.30
	Diuron	83.7	80.0	76.1		4.61
	Fenuron	103	88.8	90.0		1.32
	Fluridone	100	79.9	77.0		3.18
	Imidacloprid	99.8	157	155		1.02
	Linuron	90.5	85.5	76.0		11.7
	MCPP	93.3	72.0	65.6		9.42
	Primidone	107	101	110		8.67
	Triclopyr	90.8	71.9	62.5		14.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1954845, 1954846
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1954845, 1954846
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1954845, 1954846
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1954847, 1954848
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1954847, 1954848
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1954847, 1954848
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1954847, 1954848
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1954849, 1954850
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1954868, 1954869
SM 2120 B / E31780	True Color measured at 450 nm	1954845, 1954846
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1954845, 1954846
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1954845, 1954846

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1954845, 1954846
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1954845, 1954846
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1954847, 1954848
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1954868, 1954869
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1954868, 1954869

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	12/19/2017			12/19/2017 16:37	DeAsia Armster	1954845, 1954846
EPA 300.0 Rev. 2.1	12/19/2017			12/20/2017	Julia Storbeck	1954845, 1954846
EPA 350.1 Rev. 2.0	12/19/2017			01/02/2018	Sofia Elnemr	1954847
	12/19/2017			12/28/2017	Sofia Elnemr	1954848
EPA 351.2 Rev. 2.0	12/19/2017	12/21/2017	Adrian Shelby	12/22/2017	Joseph Suarez	1954848
	12/19/2017	12/26/2017	Adrian Shelby	12/27/2017	Joseph Suarez	1954847
EPA 353.2 Rev. 2.0	12/19/2017			12/21/2017	Beverly Y. Sanders	1954847, 1954848
EPA 365.1 Rev. 2.0	12/19/2017	12/21/2017	Adrian Shelby	12/26/2017	Lipi Saha	1954847, 1954848
EPA 365.1 Rev. 2.0 dissolved	12/19/2017			12/19/2017 15:14	Megan Treadwell	1954849
	12/19/2017			12/19/2017 15:15	Megan Treadwell	1954850
EPA 8321B	12/19/2017	12/20/2017	Juyoung Kim	12/21/2017	Juyoung Kim	1954868, 1954869
SM 2120 B	12/19/2017			12/19/2017 15:52	Tanya Welborn	1954845
	12/19/2017			12/19/2017 16:22	Tanya Welborn	1954846
SM 2320 B-97	12/19/2017			12/21/2017	Dale L. Simmons	1954845, 1954846
SM 2540 C-97	12/19/2017			12/20/2017	Yijie Li	1954845, 1954846
SM 2540 D-97	12/19/2017			12/20/2017	Yijie Li	1954845, 1954846
SM 4500 F-C-97	12/19/2017			12/21/2017	Dale L. Simmons	1954845, 1954846
SM 5310 B-00	12/19/2017			12/20/2017	Megan Treadwell	1954847, 1954848
USGS O-2060-01	12/19/2017	12/20/2017	Hoor Shaik	12/21/2017	Julie Michelle Frank	1954868, 1954869