

Chemical Analysis Report

NE-DIST-2018-01-18-02

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

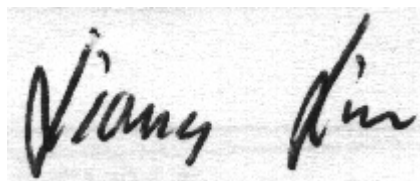
Event Description: **LSJR coast**
Request ID: **RQ-2018-01-22-11**
Customer: **NE-DIST**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-FEB-2018 19:07

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Hopkins Creek @ Kings Rd

Collection Date/Time: 01/17/2018 14:05

Field ID: 20030758

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960170	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P338447	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P338927	
	SM 2540 D-97	TSS	10		mg/L	P338611	
	SM 4500 F-C-97	Fluoride	0.58		mg F/L	P339308	
1960172	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P338944	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P339060	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P338634	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P338567	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P338924	
1960174	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P338436	
1960212	EPA 8321B	Sucralose**	0.34		ug/L	P338431	
	USGS O-2060-01	2,4-D	0.015		ug/L	P338349	
		Diuron	0.0073	I	ug/L	P338349	
		Fenuron	0.0080	U	ug/L	P338349	
		Imidacloprid	0.017		ug/L	P338349	MS
		Bentazon	0.048		ug/L	P338349	
		Linuron	0.0040	U	ug/L	P338349	
		Acetaminophen**	0.014	I	ug/L	P338349	
		MCP	0.0020	U	ug/L	P338349	
		Carbamazepine**	7.0E-04	I	ug/L	P338349	
		Triclopyr**	0.0040	U	ug/L	P338349	
		Primidone**	0.0040	U	ug/L	P338349	
		Fluridone**	0.0040		ug/L	P338349	RPD

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: Hopkins Creek @ Florida Blvd

Collection Date/Time: 01/17/2018 13:25

Field ID: 20030698

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960214	EPA 8321B	Sucralose**	0.24		ug/L	P338431	
	USGS O-2060-01	2,4-D	0.014		ug/L	P338349	
		Diuron	0.0053	I	ug/L	P338349	
		Fenuron	0.0080	U	ug/L	P338349	
		Imidacloprid	0.018		ug/L	P338349	MS
		Bentazon	0.078		ug/L	P338349	
		Linuron	0.0040	U	ug/L	P338349	
		Acetaminophen**	0.020	I	ug/L	P338349	
		MCP	0.0020	U	ug/L	P338349	
		Carbamazepine**	4.0E-04	U	ug/L	P338349	
		Triclopyr**	0.0040	U	ug/L	P338349	
		Primidone**	0.0040	U	ug/L	P338349	
		Fluridone**	0.0072		ug/L	P338349	RPD

Sample Location: Hopkins Creek @ Penman Rd

Collection Date/Time: 01/17/2018 12:55

Field ID: G2NE1157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960215	EPA 8321B	Sucralose**	0.24		ug/L	P338431	
	USGS O-2060-01	2,4-D	0.019		ug/L	P338349	
		Diuron	0.0044	I	ug/L	P338349	
		Fenuron	0.0080	U	ug/L	P338349	
		Imidacloprid	0.021		ug/L	P338349	MS
		Bentazon	0.17		ug/L	P338349	
		Linuron	0.0040	U	ug/L	P338349	
		Acetaminophen**	0.024	I	ug/L	P338349	
		MCP	0.0022	I	ug/L	P338349	
		Carbamazepine**	4.0E-04	U	ug/L	P338349	
		Triclopyr**	0.0040	U	ug/L	P338349	
		Primidone**	0.0040	U	ug/L	P338349	
		Fluridone**	0.0022		ug/L	P338349	RPD

Sample Location: Open Creek @ San Pablo Rd

Collection Date/Time: 01/17/2018 11:55

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960171	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P338447	
	SM 2320 B-97	Total Alkalinity	87		mg CaCO3/L	P338927	
	SM 2540 D-97	TSS	4	I	mg/L	P338611	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P339308	
1960173	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P338944	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P339060	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P338634	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P338834	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P338924	
1960175	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P338436	
1960213	EPA 8321B	Sucralose**	0.38		ug/L	P338431	
	USGS O-2060-01	2,4-D	0.019		ug/L	P338349	
		Diuron	0.0071	I	ug/L	P338349	
		Fenuron	0.010	I	ug/L	P338349	
		Imidacloprid	0.016		ug/L	P338349	MS
		Bentazon	0.060		ug/L	P338349	
		Linuron	0.0040	U	ug/L	P338349	
		Acetaminophen**	0.0080	U	ug/L	P338349	
		MCP	0.0020	U	ug/L	P338349	
		Carbamazepine**	6.9E-04	I	ug/L	P338349	
		Triclopyr**	0.0040	U	ug/L	P338349	
		Primidone**	0.0040	U	ug/L	P338349	
		Fluridone**	0.022		ug/L	P338349	RPD

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338447

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338944

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339060

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338634

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338567

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338834

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338436

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

Reference Method: EPA 8321B
Batch ID: P338431

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P338927

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P338611

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P339308

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P338924

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

Reference Method: USGS O-2060-01
Batch ID: P338349

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	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	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 350.1 Rev. 2.0
Batch ID: P338944

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339060

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338634

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	102		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P338927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P339308

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

Reference Method: SM 5310 B-00
Batch ID: P338924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.3		P	40 - 150
Acetaminophen	98.5		P	30 - 150
Bentazon	78.6		P	30 - 150
Carbamazepine	114		P	40 - 150
Diuron	102		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	120		P	40 - 150
Imidacloprid	113		P	40 - 160
Linuron	110		P	40 - 150
MCP	79.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P338349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	109		P	40 - 150
Triclopyr	79.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P338944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960070	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P339060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960122	Kjeldahl Nitrogen	94.1	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P338634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960172	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P338567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960123	Total-P	91.2	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P338834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960635	Total-P	92.7	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P338436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960073	O-Phosphate-P	97.0	97.5	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P338431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959537	Sucralose	87.4	97.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P339308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961888	Fluoride	96.5	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P338924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960172	Organic Carbon	93.4	94.3	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P338349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959579	2,4-D	113	103	P/P	40 - 150
1959579	Acetaminophen	87.9	109	P/P	30 - 150
1959579	Bentazon	148	105	P/P	30 - 150
1959579	Carbamazepine	100	105	P/P	40 - 150
1959579	Diuron	74.3	85.4	P/P	40 - 150
1959579	Fenuron	107	93.4	P/P	40 - 150
1959579	Fluridone	83.5	47.8	P/P	40 - 150
1959579	Imidacloprid	161	223	F/F	40 - 160
1959579	Linuron	87.7	87.0	P/P	40 - 150
1959579	MCP	97.1	75.7	P/P	40 - 150
1959579	Primidone	121	96.4	P/P	40 - 150
1959579	Triclopyr	90.9	75.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P338447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960152	Turbidity	3.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P338944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960070	Ammonia-N	0.389	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P339060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960122	Kjeldahl Nitrogen	0.321	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960172	NO2NO3-N	0.269	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960123	Total-P	3.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960635	Total-P	2.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960073	O-Phosphate-P	0.461	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P338431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959537	Sucralose	11.0	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P338927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959556	Total Alkalinity	0.0367	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P339308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961888	Fluoride	0.993	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P338924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960172	Organic Carbon	0.720	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P338349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959579	2,4-D	8.07	Spike	P	0 - 30
1959579	Acetaminophen	21.2	Spike	P	0 - 30
1959579	Bentazon	12.6	Spike	P	0 - 30
1959579	Carbamazepine	4.22	Spike	P	0 - 30
1959579	Diuron	12.2	Spike	P	0 - 30
1959579	Fenuron	13.3	Spike	P	0 - 30
1959579	Fluridone	36.3	Spike	F	0 - 30
1959579	Imidacloprid	28.3	Spike	P	0 - 30
1959579	Linuron	0.843	Spike	P	0 - 30
1959579	MCP	23.6	Spike	P	0 - 30
1959579	Primidone	22.8	Spike	P	0 - 30
1959579	Triclopyr	19.0	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: 1960212
Field Sample ID: 20030758

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	95.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	92.1	P	30 - 160
EPA 8321B	Primidone-d5	85.5	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160
USGS O-2060-01	2,4-D-d3	91.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	95.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	103	P	30 - 160
USGS O-2060-01	Diuron-d6	92.1	P	30 - 160
USGS O-2060-01	Primidone-d5	85.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	101	P	40 - 160

Lab Sample ID: 1960213
Field Sample ID: 20030695

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	98.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	90.2	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	98.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	128	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	98.3	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	101	P	30 - 160
USGS O-2060-01	Diuron-d6	90.2	P	30 - 160
USGS O-2060-01	Primidone-d5	115	P	30 - 160
USGS O-2060-01	Sucralose-d6	98.1	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1960214
Field Sample ID: 20030698

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	94.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.2	P	30 - 160
EPA 8321B	Diuron-d6	86.9	P	30 - 160
EPA 8321B	Primidone-d5	108	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160
USGS O-2060-01	2,4-D-d3	84.0	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	94.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	98.2	P	30 - 160
USGS O-2060-01	Diuron-d6	86.9	P	30 - 160
USGS O-2060-01	Primidone-d5	108	P	30 - 160
USGS O-2060-01	Sucralose-d6	105	P	40 - 160

Lab Sample ID: 1960215
Field Sample ID: G2NE1157

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	93.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.5	P	30 - 160
EPA 8321B	Diuron-d6	80.2	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160
USGS O-2060-01	2,4-D-d3	106	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	93.7	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	86.5	P	30 - 160
USGS O-2060-01	Diuron-d6	80.2	P	30 - 160
USGS O-2060-01	Primidone-d5	114	P	30 - 160
USGS O-2060-01	Sucralose-d6	101	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81535
Included Lab Sample IDs: 1960174, 1960175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81536
Included Lab Sample IDs: 1960170, 1960171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A81591
Included Lab Sample IDs: 1960212, 1960213, 1960214, 1960215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	105	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A81591

Included Lab Sample IDs: 1960212, 1960213, 1960214, 1960215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	101	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81601

Included Lab Sample IDs: 1960172

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81606

Included Lab Sample IDs: 1960172, 1960173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A81623

Included Lab Sample IDs: 1960212, 1960213, 1960214, 1960215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.9	82.4	P/P	50 - 150
Acetaminophen	107	113	P/P	60 - 150
Bentazon	97.5	101	P/P	50 - 150
Carbamazepine	118	120	P/P	60 - 150
Diuron	113	114	P/P	60 - 150
Fenuron	109	109	P/P	60 - 150
Fluridone	114	118	P/P	60 - 160
Imidacloprid	112	112	P/P	60 - 150
Linuron	107	113	P/P	60 - 150
MCPP	101	94.1	P/P	50 - 150
Primidone	106	102	P/P	60 - 150
Triclopyr	88.0	85.5	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A81689

Included Lab Sample IDs: 1960170, 1960171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	97.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81692

Included Lab Sample IDs: 1960172, 1960173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110
Organic Carbon	98.0	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A81704
Included Lab Sample IDs: 1960172, 1960173

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A81706
Included Lab Sample IDs: 1960173

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81815
Included Lab Sample IDs: 1960172, 1960173

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

Reference Method: SM 4500 F-C-97
Run ID: A81839
Included Lab Sample IDs: 1960170, 1960171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	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				3.59	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	103 103			0.389
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	94.1 94.5			0.321
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105 106			0.269
EPA 365.1 Rev. 2.0	Total-P	94.9	91.2 95.1			3.92
	Total-P	97.8	92.7 95.3			2.48
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	97.0 97.5			0.461
EPA 8321B	Sucralose	102	87.4 97.6			11.0
SM 2320 B-97	Total Alkalinity	99.5			0.0367	
SM 4500 F-C-97	Fluoride	96.6	96.5 97.9			0.993
SM 5310 B-00	Organic Carbon	96.7	93.4 94.3			0.720
USGS O-2060-01	2,4-D	75.3	113 103			8.07
	Acetaminophen	98.5	87.9 109			21.2
	Bentazon	78.6	148 105			12.6
	Carbamazepine	114	100 105			4.22
	Diuron	102	74.3 85.4			12.2
	Fenuron	114	107 93.4			13.3
	Fluridone	120	83.5 47.8			36.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
USGS O-2060-01	Imidacloprid	113	161	223			28.3
	Linuron	110	87.7	87.0			0.843
	MCPP	79.5	97.1	75.7			23.6
	Primidone	109	121	96.4			22.8
	Triclopyr	79.5	90.9	75.1			19.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1960170, 1960171
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1960172, 1960173
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1960172, 1960173
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1960172, 1960173
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1960172, 1960173
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1960174, 1960175
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1960212, 1960213, 1960214, 1960215
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1960170, 1960171
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1960170, 1960171
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1960170, 1960171
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1960172, 1960173
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1960212, 1960213, 1960214, 1960215
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1960212, 1960213, 1960214, 1960215

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	01/18/2018			01/18/2018 14:33	DeAsia Armster	1960170, 1960171
EPA 350.1 Rev. 2.0	01/18/2018			01/26/2018	Ping Hua	1960172, 1960173
EPA 351.2 Rev. 2.0	01/18/2018	01/31/2018	Adrian Shelby	02/02/2018	Joseph Suarez	1960172, 1960173
EPA 353.2 Rev. 2.0	01/18/2018			01/23/2018	Lauren Bottorf	1960172, 1960173
EPA 365.1 Rev. 2.0	01/18/2018	01/22/2018	Sima Feizi	01/23/2018	Beverly Y. Sanders	1960172
	01/18/2018	01/26/2018	Sima Feizi	01/29/2018	Lipi Saha	1960173
EPA 365.1 Rev. 2.0 dissolved	01/18/2018			01/18/2018 14:35	Megan Treadwell	1960174
	01/18/2018			01/18/2018 14:36	Megan Treadwell	1960175
EPA 8321B	01/18/2018	01/19/2018	Juyoung Kim	01/20/2018	Juyoung Kim	1960212, 1960213, 1960214, 1960215
SM 2320 B-97	01/18/2018			01/27/2018	Lauren Bottorf	1960170, 1960171
SM 2540 D-97	01/18/2018			01/19/2018	DeAsia Armster	1960170, 1960171
SM 4500 F-C-97	01/18/2018			02/03/2018	Dale L. Simmons	1960170, 1960171
SM 5310 B-00	01/18/2018			01/27/2018	Megan Treadwell	1960172, 1960173
USGS O-2060-01	01/18/2018	01/19/2018	Hoor Shaik	01/20/2018	Julie Michelle Frank	1960212, 1960213, 1960214, 1960215