

Chemical Analysis Report

SW-DIST-2018-11-01-01

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

Event Description: **Gilley Creek**
Request ID: **RQ-2018-10-29-43**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

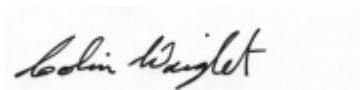
For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

This Report replaces the previous Report Serial Number: 0110186

Report Comment: DUP added to G2SW0039 per customer.

Revision certified by: Colin Wright, Program Administrator

Date Certified: 11-DEC-2018 12:06



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: GILLEY CRK @ STRICKLANDS

Collection Date/Time: 10/31/2018 10:20

Field ID: G2SW0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2038130	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P354072	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P355053	
		Sulfate	27		mg SO4/L	P355058	
	SM 2120 B	Color (true)	74		PCU	P354450	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P354358	
	SM 2540 C-97	TDS	104		mg/L	P354607	
	SM 2540 D-97	TSS	2	I	mg/L	P354528	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P354364	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P354509	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P354291	
2038131	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P354296	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P354225	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P354326	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.30		mg P/L	P354083	
	dissolved						
2038132	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.30		mg P/L	P354083	

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: GILLEY CRK @ STRICKLANDS

Collection Date/Time: 10/31/2018 10:20

Field ID: G2SW0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2038140	EPA 8321B	2,4-D	0.0020	U	ug/L	P354103	
		Sucralose**	0.010	U	ug/L	P354052	
		Bentazon	0.0013	I	ug/L	P354103	
		MCP	0.0020	U	ug/L	P354103	MS
		Triclopyr**	0.0040	U	ug/L	P354103	
		Imidacloprid	0.0063	I	ug/L	P354103	MS
		Diuron	0.0069	I	ug/L	P354103	
		Pyraclostrobin**	0.0020	U	ug/L	P354103	
		Primidone**	0.0040	U	ug/L	P354103	
		Linuron	0.0040	U	ug/L	P354103	
		Acetaminophen**	0.0080	U	ug/L	P354103	
		Fenuron	0.016	U	ug/L	P354103	
		Imazapyr**	0.069		ug/L	P354103	
		Carbamazepine**	8.0E-04	U	ug/L	P354103	
		Fluridone**	4.0E-04	U	ug/L	P354103	
		Hydrocodone**	8.0E-04	U	ug/L	P354103	
		Naproxen**	0.0080	U	ug/L	P354103	
		Ibuprofen**	0.020	U	ug/L	P354103	
		Acesulfame K**	0.10	U	ug/L	P354052	

Sample Location: GILLEY CREEK DOWNSTREAM

Collection Date/Time: 10/31/2018 10:45

Field ID: G2SW0039

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2038141	EPA 8321B	2,4-D	0.0020	U	ug/L	P354103	
		Sucralose**	0.010	U	ug/L	P354052	
		Bentazon	8.0E-04	U	ug/L	P354103	
		MCP	0.0020	U	ug/L	P354103	MS
		Triclopyr**	0.0040	U	ug/L	P354103	
		Imidacloprid	0.0066	I	ug/L	P354103	MS
		Diuron	0.0046	I	ug/L	P354103	
		Pyraclostrobin**	0.0020	U	ug/L	P354103	
		Primidone**	0.0040	U	ug/L	P354103	
		Linuron	0.0040	U	ug/L	P354103	
		Acetaminophen**	0.0080	U	ug/L	P354103	
		Fenuron	0.016	U	ug/L	P354103	
		Imazapyr**	0.045		ug/L	P354103	
		Carbamazepine**	8.0E-04	U	ug/L	P354103	
		Fluridone**	4.0E-04	U	ug/L	P354103	
		Hydrocodone**	8.0E-04	U	ug/L	P354103	
		Naproxen**	0.0080	U	ug/L	P354103	
		Ibuprofen**	0.020	U	ug/L	P354103	
		Acesulfame K**	0.10	U	ug/L	P354052	

Sample Location: GILLEY CREEK DOWNSTREAM_DUP

Collection Date/Time: 10/31/2018 10:50

Field ID: G2SW0039_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2038142	EPA 8321B	2,4-D	0.0020	U	ug/L	P354103	
		Sucralose**	0.010	U	ug/L	P354052	
		Bentazon	8.0E-04	U	ug/L	P354103	
		MCP	0.0020	U	ug/L	P354103	MS
		Triclopyr**	0.0040	U	ug/L	P354103	
		Imidacloprid	0.0065	I	ug/L	P354103	MS
		Diuron	0.0041	I	ug/L	P354103	
		Pyraclostrobin**	0.0020	U	ug/L	P354103	
		Primidone**	0.0040	U	ug/L	P354103	
		Linuron	0.0040	U	ug/L	P354103	
		Acetaminophen**	0.0080	U	ug/L	P354103	
		Fenuron	0.016	U	ug/L	P354103	
		Imazapyr**	0.046		ug/L	P354103	
		Carbamazepine**	8.0E-04	U	ug/L	P354103	
		Fluridone**	4.0E-04	U	ug/L	P354103	
		Hydrocodone**	8.0E-04	U	ug/L	P354103	
		Naproxen**	0.0080	U	ug/L	P354103	
		Ibuprofen**	0.020	U	ug/L	P354103	
		Acesulfame K**	0.10	U	ug/L	P354052	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354072

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355053

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355058

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354509

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354291

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354296

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: P354225

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354083

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

Reference Method: EPA 8321B
Batch ID: P354052

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P354103

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P354450

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P354358

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

Reference Method: SM 2540 C-97
Batch ID: P354607

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354528

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P354364

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P354326

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P354326

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355053

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355058

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354509

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354291

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354296

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354083

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

Reference Method: EPA 8321B
Batch ID: P354052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	83.2		P	40 - 150
Sucralose	88.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P354103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
Acetaminophen	131		P	30 - 150
Bentazon	85.8		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P354103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	93.3		P	40 - 150
Diuron	81.1		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	113		P	40 - 150
Hydrocodone	124		P	40 - 150
Ibuprofen	86.1		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	129		P	40 - 160
Linuron	91.7		P	40 - 150
MCPP	118		P	40 - 150
Naproxen	80.0		P	40 - 150
Primidone	115		P	40 - 150
Pyraclostrobin	82.7		P	40 - 150
Triclopyr	112		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P354450

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

Reference Method: SM 2320 B-97
Batch ID: P354358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P354364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037915	Chloride	99.3		P	90 - 110
2038130	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037915	Sulfate	98.1		P	90 - 110
2038130	Sulfate	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038204	Ammonia-N	101	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038055	Kjeldahl Nitrogen	98.2	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038190	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038101	Total-P	101	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354083

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038301	O-Phosphate-P	96.6	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354052

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038088	Acesulfame K	106	108	P/P	40 - 150
2038088	Sucralose	81.4	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P354103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038088	2,4-D	125	138	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P354103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038088	Acetaminophen	131	127	P/P	30 - 150
2038088	Bentazon	48.3	48.5	P/P	30 - 150
2038088	Carbamazepine	73.3	71.8	P/P	40 - 150
2038088	Diuron	58.9	53.6	P/P	40 - 150
2038088	Fenuron	132	122	P/P	40 - 150
2038088	Fluridone	114	106	P/P	40 - 150
2038088	Hydrocodone	120	111	P/P	40 - 150
2038088	Ibuprofen	78.1	79.6	P/P	40 - 150
2038088	Imazapyr	116	108	P/P	40 - 150
2038088	Imidacloprid	204	177	F/F	40 - 160
2038088	Linuron	62.7	64.9	P/P	40 - 150
2038088	MCPP	151	145	F/P	40 - 150
2038088	Naproxen	81.8	80.5	P/P	40 - 150
2038088	Primidone	114	107	P/P	40 - 150
2038088	Pyraclostrobin	75.0	73.5	P/P	40 - 150
2038088	Triclopyr	131	132	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P354364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038075	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038052	Organic Carbon	97.4	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038130	Turbidity	4.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037915	Chloride	0.165	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037915	Sulfate	0.664	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038204	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038055	Kjeldahl Nitrogen	4.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038190	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038101	Total-P	6.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038301	O-Phosphate-P	2.35	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P354052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038088	Acesulfame K	0.918	Spike	P	0 - 30
2038088	Sucralose	16.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P354103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038088	2,4-D	6.27	Spike	P	0 - 30
2038088	Acetaminophen	2.80	Spike	P	0 - 30
2038088	Bentazon	0.207	Spike	P	0 - 30
2038088	Carbamazepine	1.63	Spike	P	0 - 30
2038088	Diuron	5.85	Spike	P	0 - 30
2038088	Fenuron	7.71	Spike	P	0 - 30
2038088	Fluridone	7.93	Spike	P	0 - 30
2038088	Hydrocodone	8.07	Spike	P	0 - 30
2038088	Ibuprofen	1.97	Spike	P	0 - 30
2038088	Imazapyr	6.30	Spike	P	0 - 30
2038088	Imidacloprid	12.1	Spike	P	0 - 30
2038088	Linuron	3.45	Spike	P	0 - 30
2038088	MCPP	2.76	Spike	P	0 - 30
2038088	Naproxen	1.51	Spike	P	0 - 30
2038088	Primidone	5.94	Spike	P	0 - 30
2038088	Pyraclostrobin	2.10	Spike	P	0 - 30
2038088	Triclopyr	1.01	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P354450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038200	Color (true)	1.34	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P354358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038075	Total Alkalinity	0.592	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P354607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038099	TDS	5.33	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P354364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038075	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P354326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038052	Organic Carbon	0.948	Spike	P	0 - 20

* 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: 2038140
Field Sample ID: G2SW0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	130	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.3	P	30 - 160
EPA 8321B	Diuron-d6	86.8	P	30 - 160
EPA 8321B	Endothall-d6	116	P	40 - 160
EPA 8321B	Endothall-d6	116	P	40 - 160
EPA 8321B	Ibuprofen-d3	89.1	P	30 - 160
EPA 8321B	Primidone-d5	97.3	P	30 - 160
EPA 8321B	Sucralose-d6	95.1	P	40 - 160
EPA 8321B	Sucralose-d6	95.1	P	40 - 160

Lab Sample ID: 2038141
Field Sample ID: G2SW0039

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	144	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.2	P	30 - 160
EPA 8321B	Diuron-d6	99.2	P	30 - 160
EPA 8321B	Endothall-d6	112	P	40 - 160
EPA 8321B	Endothall-d6	112	P	40 - 160
EPA 8321B	Ibuprofen-d3	85.9	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	40 - 160
EPA 8321B	Sucralose-d6	94.8	P	40 - 160

Lab Sample ID: 2038142
Field Sample ID: G2SW0039_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	126	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.8	P	30 - 160
EPA 8321B	Diuron-d6	95.6	P	30 - 160
EPA 8321B	Endothall-d6	120	P	40 - 160
EPA 8321B	Endothall-d6	120	P	40 - 160
EPA 8321B	Ibuprofen-d3	92.6	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	69.4	P	40 - 160
EPA 8321B	Sucralose-d6	69.4	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87461

Included Lab Sample IDs: 2038130

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: A87463

Included Lab Sample IDs: 2038132

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87506

Included Lab Sample IDs: 2038140, 2038141, 2038142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.0	63.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87510

Included Lab Sample IDs: 2038140, 2038141, 2038142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	82.4	79.9	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87559

Included Lab Sample IDs: 2038131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87560

Included Lab Sample IDs: 2038131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A87585

Included Lab Sample IDs: 2038131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	96.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A87599

Included Lab Sample IDs: 2038130

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A87599

Included Lab Sample IDs: 2038130

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

Reference Method: EPA 8321B

Run ID: A87626

Included Lab Sample IDs: 2038140, 2038141, 2038142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.5	101	P/P	50 - 150
Acetaminophen	97.7	122	P/P	60 - 160
Bentazon	98.4	106	P/P	50 - 160
Carbamazepine	111	116	P/P	60 - 160
Diuron	99.8	109	P/P	60 - 150
Fenuron	118	115	P/P	60 - 150
Fluridone	128	123	P/P	60 - 160
Hydrocodone	109	110	P/P	60 - 150
Ibuprofen	76.0	106	P/P	50 - 160
Imazapyr	104	109	P/P	50 - 150
Imidacloprid	113	101	P/P	60 - 160
Linuron	116	127	P/P	60 - 150
MCPP	100	99.3	P/P	50 - 150
Naproxen	95.9	96.8	P/P	50 - 160
Primidone	107	111	P/P	60 - 160
Pyraclostrobin	92.3	97.2	P/P	60 - 150
Triclopyr	98.7	99.2	P/P	50 - 160

Reference Method: SM 2120 B

Run ID: A87642

Included Lab Sample IDs: 2038130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87646

Included Lab Sample IDs: 2038131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87674

Included Lab Sample IDs: 2038131

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87936

Included Lab Sample IDs: 2038130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87936

Included Lab Sample IDs: 2038130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				4.33	
EPA 300.0 Rev. 2.1	Chloride	102	99.3	98.0	0.165	
	Sulfate	101	98.1	95.4	0.664	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	101	99.6		1.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	98.2	104		4.19
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	103		0.487
EPA 365.1 Rev. 2.0	Total-P	98.1	101	108		6.00
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	96.6	98.9		2.35
EPA 8321B	2,4-D	105	125	138		6.27
	Acesulfame K	83.2	106	108		0.918
	Acetaminophen	131	131	127		2.80
	Bentazon	85.8	48.3	48.5		0.207
	Carbamazepine	93.3	73.3	71.8		1.63
	Diuron	81.1	58.9	53.6		5.85
	Fenuron	129	132	122		7.71
	Fluridone	113	114	106		7.93
	Hydrocodone	124	120	111		8.07
	Ibuprofen	86.1	78.1	79.6		1.97
	Imazapyr	112	116	108		6.30
	Imidacloprid	129	204	177		12.1
	Linuron	91.7	62.7	64.9		3.45
	MCPP	118	151	145		2.76
	Naproxen	80.0	81.8	80.5		1.51
	Primidone	115	114	107		5.94
	Pyraclostrobin	82.7	75.0	73.5		2.10
	Sucralose	88.1	81.4	103		16.7
	Triclopyr	112	131	132		1.01
SM 2120 B	Color (true)	100			1.34	
SM 2320 B-97	Total Alkalinity	103			0.592	
SM 2540 C-97	TDS				5.33	
SM 4500 F-C-97	Fluoride	102	101	101		0.0
SM 5310 B-00	Organic Carbon	97.0	97.4	95.8		0.948

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2038130
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2038130
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2038130
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2038131
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2038131
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2038131
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2038131
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2038132
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2038140, 2038141, 2038142
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2038140, 2038141, 2038142
SM 2120 B / E31780	True Color measured at 450 nm	2038130

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2038130
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2038130
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2038130
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2038130
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2038131

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	11/01/2018			11/01/2018 16:10	Megan Treadwell	2038130
EPA 300.0 Rev. 2.1	11/01/2018			11/21/2018 20:43	Lipi Saha	2038130
EPA 350.1 Rev. 2.0	11/01/2018			11/08/2018 12:44	Ping Hua	2038131
EPA 351.2 Rev. 2.0	11/01/2018	11/06/2018 12:30	Adrian Shelby	11/08/2018 13:53	Joseph Suarez	2038131
EPA 353.2 Rev. 2.0	11/01/2018			11/06/2018 13:54	Lauren Bottorf	2038131
EPA 365.1 Rev. 2.0	11/01/2018	11/05/2018 11:55	Sima Feizi	11/06/2018 11:49	Beverly Y. Sanders	2038131
EPA 365.1 Rev. 2.0 dissolved	11/01/2018			11/01/2018 15:27	Julia Storbeck	2038132
EPA 8321B	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/02/2018 14:47	Rebecca Ware	2038140
	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/02/2018 15:02	Rebecca Ware	2038141
	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/02/2018 15:16	Rebecca Ware	2038142
	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/03/2018 08:15	Mohammad Ghaffari	2038140
	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/03/2018 15:19	Mohammad Ghaffari	2038141
	11/01/2018	11/02/2018 12:30	Rebecca Ware	11/03/2018 15:34	Mohammad Ghaffari	2038142
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/07/2018 06:10	Juyoung Kim	2038140
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/07/2018 06:45	Juyoung Kim	2038141
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/07/2018 07:19	Juyoung Kim	2038142
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/08/2018 13:17	Juyoung Kim	2038140
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/08/2018 13:52	Juyoung Kim	2038141
	11/01/2018	11/06/2018 10:00	Hoor Shaik	11/08/2018 14:26	Juyoung Kim	2038142
SM 2120 B	11/01/2018			11/01/2018 15:24	Chelsea Hernandez	2038130
SM 2320 B-97	11/01/2018			11/07/2018 09:09	Dale L. Simmons	2038130
SM 2540 C-97	11/01/2018			11/06/2018 15:10	Yijie Li	2038130
SM 2540 D-97	11/01/2018			11/06/2018 15:10	Yijie Li	2038130
SM 4500 F-C-97	11/01/2018			11/07/2018 09:09	Dale L. Simmons	2038130
SM 5310 B-00	11/01/2018			11/06/2018 04:42	Megan Treadwell	2038131