

Chemical Analysis Report

SW-DIST-2018-02-06-01

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

Event Description: **Gilley Crk**
Request ID: **RQ-2018-02-05-26**
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
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-FEB-2018 16:43

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: Gilley Creek @ Stricklands

Collection Date/Time: 02/05/2018 12:43

Field ID: G2SW0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964768	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P339409	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P339701	
		Sulfate	41		mg SO4/L	P339706	
	SM 2120 B	Color (true)	86		PCU	P339425	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P340123	
	SM 2540 C-97	TDS	158	A	mg/L	P339750	
	SM 2540 D-97	TSS	3	IA	mg/L	P339689	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P340137	
1964769	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P339774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P339560	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.61		mg N/L	P339851	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P339581	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P339914	
1964770	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.34		mg P/L	P339448	

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 Creek @ Stricklands

Collection Date/Time: 02/05/2018 12:43

Field ID: G2SW0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964787	EPA 8321B	2,4-D	0.0020	U	ug/L	P339218	
		Sucralose**	0.010	U	ug/L	P339388	
		Bentazon	9.1E-04	I	ug/L	P339218	
		MCP	0.0020	U	ug/L	P339218	
		Triclopyr**	0.0040	U	ug/L	P339218	
		Imidacloprid	0.0066	I	ug/L	P339218	
		Diuron	0.0031	I	ug/L	P339218	
		Primidone**	0.0040	U	ug/L	P339218	
		Linuron	0.0040	U	ug/L	P339218	
		Acetaminophen**	0.0080	U	ug/L	P339218	
		Fenuron	0.0080	U	ug/L	P339218	
		Carbamazepine**	4.0E-04	U	ug/L	P339218	
		Fluridone**	8.0E-04	U	ug/L	P339218	

Ref. Method and Comment:

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Gilley Creek Downstream

Collection Date/Time: 02/05/2018 13:20

Field ID: G2SW0039

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964788	EPA 8321B	2,4-D	0.0020	U	ug/L	P339218	
		Sucralose**	0.018	I	ug/L	P339388	
		Bentazon	8.0E-04	U	ug/L	P339218	
		MCP	0.0020	U	ug/L	P339218	

Field ID: G2SW0039

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1964788	EPA 8321B	Triclopyr**	0.0040	U	ug/L	P339218	
		Imidacloprid	0.0020	U	ug/L	P339218	
		Diuron	0.0020	U	ug/L	P339218	
		Primidone**	0.0040	U	ug/L	P339218	
		Linuron	0.0040	U	ug/L	P339218	
		Acetaminophen**	0.0080	U	ug/L	P339218	
		Fenuron	0.0080	U	ug/L	P339218	
		Carbamazepine**	4.0E-04	U	ug/L	P339218	
		Fluridone**	8.0E-04	U	ug/L	P339218	

Ref. Method and Comment:
 EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P339409

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P339701

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P339706

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P339774

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P339560

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P339851

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339581

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339448

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

Reference Method: EPA 8321B
Batch ID: P339218

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	8.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339388

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P339425

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P340123

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

Reference Method: SM 2540 C-97
Batch ID: P339750

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P339689

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P340137

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P339914

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: P339701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339774

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339581

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: P339448

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

Reference Method: EPA 8321B
Batch ID: P339218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.2		P	40 - 150
Acetaminophen	109		P	30 - 150
Bentazon	84.2		P	30 - 150
Carbamazepine	94.0		P	40 - 150
Diuron	86.8		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	86.2		P	40 - 150
Imidacloprid	95.2		P	40 - 160
Linuron	89.5		P	40 - 150
MCPP	81.1		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	73.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P340123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.5		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P340137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P339914

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

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964687	Chloride	97.1		P	90 - 110
1964822	Chloride	95.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964687	Sulfate	95.8		P	90 - 110
1964822	Sulfate	93.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964763	Ammonia-N	97.1	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964763	Kjeldahl Nitrogen	96.8	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964730	NO2NO3-N	98.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964806	Total-P	97.0	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964604	O-Phosphate-P	97.0	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963931	Acetaminophen	134	126	P/P	30 - 150
1963931	Bentazon	68.5	57.0	P/P	30 - 150
1963931	Carbamazepine	93.4	90.7	P/P	40 - 150
1963931	Diuron	84.6	77.4	P/P	40 - 150
1963931	Fenuron	98.1	88.2	P/P	40 - 150
1963931	Fluridone	71.6	66.0	P/P	40 - 150
1963931	Imidacloprid	149	153	P/P	40 - 160
1963931	Linuron	85.7	87.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P339218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963931	MCP	64.2	59.4	P/P	40 - 150
1963931	Primidone	127	113	P/P	40 - 150
1963931	Triclopyr	64.7	52.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964717	Sucralose	100	102	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P340137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964822	Fluoride	95.5	96.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964688	Organic Carbon	96.3	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964728	Turbidity	2.09	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964822	Chloride	0.0559	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964822	Sulfate	0.0422	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964763	Ammonia-N	2.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964763	Kjeldahl Nitrogen	4.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964730	NO2NO3-N	1.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964806	Total-P	5.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964604	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P339218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963931	2,4-D	21.5	Spike	P	0 - 30
1963931	Acetaminophen	5.63	Spike	P	0 - 30
1963931	Bentazon	8.15	Spike	P	0 - 30
1963931	Carbamazepine	2.87	Spike	P	0 - 30
1963931	Diuron	8.34	Spike	P	0 - 30
1963931	Fenuron	10.6	Spike	P	0 - 30
1963931	Fluridone	2.79	Spike	P	0 - 30
1963931	Imidacloprid	2.65	Spike	P	0 - 30
1963931	Linuron	2.27	Spike	P	0 - 30
1963931	MCP	7.72	Spike	P	0 - 30
1963931	Primidone	11.2	Spike	P	0 - 30
1963931	Triclopyr	20.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964717	Sucralose	1.33	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P339425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964751	Color (true)	2.09	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P340123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964822	Total Alkalinity	2.79	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964768	TDS	5.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P340137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964822	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P339914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964688	Organic Carbon	0.381	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: 1964787
Field Sample ID: G2SW0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.8	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1964787
Field Sample ID: G2SW0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	93.9	P	30 - 160
EPA 8321B	Primidone-d5	99.2	P	30 - 160
EPA 8321B	Sucralose-d6	137	P	40 - 160

Lab Sample ID: 1964788
Field Sample ID: G2SW0039

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	47.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	141	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	91.4	P	30 - 160
EPA 8321B	Primidone-d5	138	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81879
Included Lab Sample IDs: 1964768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A81881
Included Lab Sample IDs: 1964768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	98.4	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81897
Included Lab Sample IDs: 1964770

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81947
Included Lab Sample IDs: 1964769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A81950
Included Lab Sample IDs: 1964787, 1964788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A81950

Included Lab Sample IDs: 1964787, 1964788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	103	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81955

Included Lab Sample IDs: 1964769

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81969

Included Lab Sample IDs: 1964768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	101	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81995

Included Lab Sample IDs: 1964769

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82028

Included Lab Sample IDs: 1964769

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

Reference Method: SM 5310 B-00

Run ID: A82049

Included Lab Sample IDs: 1964769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	95.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82122

Included Lab Sample IDs: 1964768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	96.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A82122

Included Lab Sample IDs: 1964768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.6	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A82192

Included Lab Sample IDs: 1964787, 1964788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.4	92.1	P/P	50 - 150
Acetaminophen	105	112	P/P	60 - 150
Bentazon	108	109	P/P	50 - 150
Carbamazepine	117	114	P/P	60 - 150
Diuron	111	123	P/P	60 - 150
Fenuron	113	111	P/P	60 - 150
Fluridone	101	99.4	P/P	60 - 160
Imidacloprid	104	109	P/P	60 - 150
Linuron	121	119	P/P	60 - 150
MCP	97.4	96.3	P/P	50 - 150
Primidone	114	114	P/P	60 - 150
Triclopyr	90.8	90.4	P/P	50 - 150

* 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				2.09	
EPA 300.0 Rev. 2.1	Chloride	97.5	95.0 97.1		0.0559	
	Sulfate	95.9	93.9 95.8		0.0422	
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.1 101			2.70
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.9	96.8 104			4.92
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	98.5 100			1.51
EPA 365.1 Rev. 2.0	Total-P	101	97.0 103			5.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.0 97.0			0.0
EPA 8321B	2,4-D	71.2				21.5
	Acetaminophen	109	134 126			5.63
	Bentazon	84.2	68.5 57.0			8.15
	Carbamazepine	94.0	93.4 90.7			2.87
	Diuron	86.8	84.6 77.4			8.34
	Fenuron	115	98.1 88.2			10.6
	Fluridone	86.2	71.6 66.0			2.79
	Imidacloprid	95.2	149 153			2.65
	Linuron	89.5	85.7 87.7			2.27
	MCP	81.1	64.2 59.4			7.72
	Primidone	107	127 113			11.2
	Sucralose	97.0	100 102			1.33
	Triclopyr	73.8	64.7 52.8			20.2
SM 2120 B	Color (true)				2.09	
SM 2320 B-97	Total Alkalinity	97.5			2.79	
SM 2540 C-97	TDS				5.06	
SM 4500 F-C-97	Fluoride	94.5	95.5 96.1			0.482
SM 5310 B-00	Organic Carbon	96.8	95.9 96.3			0.381

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1964768
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1964768
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1964768
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1964769
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1964769
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1964769
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1964769
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1964770
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1964787, 1964788
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1964787, 1964788
SM 2120 B / E31780	True Color measured at 450 nm	1964768
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1964768
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1964768
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1964768
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1964768
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1964769

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	02/06/2018			02/06/2018 17:02	DeAsia Armster	1964768
EPA 300.0 Rev. 2.1	02/06/2018			02/10/2018	Julia Storbeck	1964768
EPA 350.1 Rev. 2.0	02/06/2018			02/12/2018	Julia Storbeck	1964769
EPA 351.2 Rev. 2.0	02/06/2018	02/08/2018	Adrian Shelby	02/09/2018	Joseph Suarez	1964769
EPA 353.2 Rev. 2.0	02/06/2018			02/13/2018	Lauren Bottorf	1964769
EPA 365.1 Rev. 2.0	02/06/2018	02/08/2018	Sima Feizi	02/09/2018	Lipi Saha	1964769
EPA 365.1 Rev. 2.0 dissolved	02/06/2018			02/06/2018 18:00	Megan Treadwell	1964770
EPA 8321B	02/06/2018	02/06/2018	Juyoung Kim	02/09/2018	Juyoung Kim	1964787, 1964788
	02/06/2018	02/07/2018	Hoor Shaik	02/09/2018	Julie Michelle Frank	1964787, 1964788
	02/06/2018	02/07/2018	Hoor Shaik	02/10/2018	Julie Michelle Frank	1964787, 1964788
SM 2120 B	02/06/2018			02/06/2018 19:18	Tanya Welborn	1964768
SM 2320 B-97	02/06/2018			02/16/2018	Dale L. Simmons	1964768
SM 2540 C-97	02/06/2018			02/07/2018	Yijie Li	1964768
SM 2540 D-97	02/06/2018			02/07/2018	Yijie Li	1964768
SM 4500 F-C-97	02/06/2018			02/16/2018	Dale L. Simmons	1964768
SM 5310 B-00	02/06/2018			02/14/2018	Megan Treadwell	1964769