

Chemical Analysis Report

CEN-DIST-2018-11-21-01

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

Event Description: **Little / Wolf / crab**

Request ID: **RQ-2018-11-19-24**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

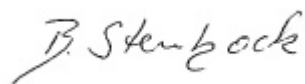
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Date Certified: 11-DEC-2018 16:49



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: Bull Creek @ Upstream of 441 Bridge

Collection Date/Time: 11/20/2018 11:59

Field ID: G3CE0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043267	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P355039	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P355452	
		Sulfate	1.8		mg SO4/L	P355455	
	SM 2120 B	Color (true)	320		PCU	P355036	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P355468	
	SM 2540 C-97	TDS	101		mg/L	P355460	
	SM 2540 D-97	TSS	4	I	mg/L	P355462	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P355473	
2043268	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P355303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P355215	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P355328	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P355325	
2043269	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P355042	
2043277	EPA 8321B	2,4-D	0.0020	U	ug/L	P355009	
		Sucralose**	0.010	U	ug/L	P355085	
		Bentazon	8.0E-04	U	ug/L	P355009	
		MCP	0.0020	U	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.0020	U	ug/L	P355009	
		Diuron	0.0020	U	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.0040	U	ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	4.0E-04	U	ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.10	U	ug/L	P354971	

Ref. Method and Comment:

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

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

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: Crabgrass Creek @ 250m south of Highway 192 Bridge

Collection Date/Time: 11/20/2018 12:45

Field ID: G3CE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043270	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P355039	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P355452	
		Sulfate	1.4		mg SO4/L	P355455	
	SM 2120 B	Color (true)	60	A	PCU	P355036	
	SM 2320 B-97	Total Alkalinity	123	A	mg CaCO3/L	P355468	
	SM 2540 C-97	TDS	178		mg/L	P355460	
	SM 2540 D-97	TSS	2	I	mg/L	P355462	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P355473	
2043271	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P355303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P355215	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072		mg N/L	P355262	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P355325	
2043272	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P355042	

Ref. Method and Comment:

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

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355039

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355452

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355455

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355262

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355328

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355042

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P354971

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355009

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: EPA 8321B
Batch ID: P355085

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P355036

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P355468

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

Reference Method: SM 2540 C-97
Batch ID: P355460

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355462

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P355462

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355473

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P355325

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: P355452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355262

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	94.5		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P355009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.1		P	40 - 150
Acetaminophen	114		P	30 - 150
Bentazon	72.6		P	30 - 150
Carbamazepine	80.4		P	40 - 150
Diuron	69.6		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	98.6		P	40 - 150
Ibuprofen	78.4		P	40 - 150
Imazapyr	77.8		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	76.9		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	91.5		P	40 - 150
Primidone	80.0		P	40 - 150
Pyraclostrobin	71.7		P	40 - 150
Triclopyr	72.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P355036

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P355468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355473

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

Reference Method: SM 5310 B-00
Batch ID: P355325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042124	Chloride	100		P	90 - 110
2042937	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042124	Sulfate	98.4		P	90 - 110
2042937	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043244	Ammonia-N	93.1	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043271	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043238	NO2NO3-N	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043394	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043245	O-Phosphate-P	97.6	99.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Acesulfame K	137	131	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043262	2,4-D	107	120	P/P	40 - 150
2043262	Acetaminophen	130	130	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043262	Bentazon	53.3	62.0	P/P	30 - 150
2043262	Carbamazepine	79.7	81.3	P/P	40 - 150
2043262	Diuron	61.7	64.9	P/P	40 - 150
2043262	Fenuron	81.5	84.7	P/P	40 - 150
2043262	Fluridone	105	102	P/P	40 - 150
2043262	Hydrocodone	84.1	85.3	P/P	40 - 150
2043262	Ibuprofen	72.3	66.9	P/P	40 - 150
2043262	Imidacloprid	125	128	P/P	40 - 160
2043262	Linuron	67.2	68.2	P/P	40 - 150
2043262	MCPD	134	129	P/P	40 - 150
2043262	Naproxen	86.6	59.7	P/P	40 - 150
2043262	Primidone	79.8	131	P/P	40 - 150
2043262	Pyraclostrobin	54.7	53.1	P/P	40 - 150
2043262	Triclopyr	79.2	78.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Sucralose	85.2	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P355473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043270	Fluoride	98.6	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043003	Organic Carbon	98.6	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043280	Turbidity	2.32	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042937	Chloride	0.659	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042937	Sulfate	0.561	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043244	Ammonia-N	4.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043284	Kjeldahl Nitrogen	0.989	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043271	NO2NO3-N	0.366	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043238	NO2NO3-N	0.564	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043394	Total-P	1.65	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043245	O-Phosphate-P	1.09	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P354971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Acesulfame K	4.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043262	2,4-D	11.0	Spike	P	0 - 30
2043262	Acetaminophen	0.135	Spike	P	0 - 30
2043262	Bentazon	15.2	Spike	P	0 - 30
2043262	Carbamazepine	1.96	Spike	P	0 - 30
2043262	Diuron	5.07	Spike	P	0 - 30
2043262	Fenuron	3.92	Spike	P	0 - 30
2043262	Fluridone	2.98	Spike	P	0 - 30
2043262	Hydrocodone	1.37	Spike	P	0 - 30
2043262	Ibuprofen	7.79	Spike	P	0 - 30
2043262	Imazapyr	20.5	Spike	P	0 - 30
2043262	Imidacloprid	2.12	Spike	P	0 - 30
2043262	Linuron	1.51	Spike	P	0 - 30
2043262	MCPP	4.01	Spike	P	0 - 30
2043262	Naproxen	36.8	Spike	F	0 - 30
2043262	Primidone	48.9	Spike	F	0 - 30
2043262	Pyraclostrobin	2.97	Spike	P	0 - 30
2043262	Triclopyr	1.20	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Sucralose	16.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P355036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043270	Color (true)	1.49	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P355468

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

Reference Method: SM 2320 B-97
Batch ID: P355468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043270	Total Alkalinity	1.03	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P355460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043165	TDS	3.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043270	Fluoride	0.530	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043003	Organic Carbon	2.03	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: 2043277
Field Sample ID: G3CE0009

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.1	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	91.2	P	40 - 160
EPA 8321B	Endothall-d6	91.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	81.3	P	30 - 160
EPA 8321B	Primidone-d5	37.7	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A87929

Included Lab Sample IDs: 2043267, 2043270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.5	P/P	85 - 115
Color (true)	98.8	98.6	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87930

Included Lab Sample IDs: 2043267, 2043270

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: A87931

Included Lab Sample IDs: 2043269, 2043272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87945

Included Lab Sample IDs: 2043277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.4	84.2	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87969

Included Lab Sample IDs: 2043268, 2043271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.6	P/P	90 - 110
Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87993

Included Lab Sample IDs: 2043267, 2043270

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

Reference Method: EPA 8321B

Run ID: A88012

Included Lab Sample IDs: 2043277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	109	P/P	50 - 150
Acetaminophen	136	115	P/P	60 - 160
Bentazon	116	69.7	P/P	50 - 160
Carbamazepine	116	99.7	P/P	60 - 160
Diuron	93.2	83.9	P/P	60 - 150
Fenuron	119	107	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A88012
Included Lab Sample IDs: 2043277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	119	128	P/P	60 - 160
Hydrocodone	103	107	P/P	60 - 150
Ibuprofen	94.5	85.0	P/P	50 - 160
Imazapyr	92.4	86.3	P/P	50 - 150
Imidacloprid	121	94.8	P/P	60 - 160
Linuron	102	101	P/P	60 - 150
MCPP	95.9	95.0	P/P	50 - 150
Naproxen	76.0	84.4	P/P	50 - 160
Primidone	118	87.2	P/P	60 - 160
Pyraclostrobin	108	163*	P/F	60 - 150
Triclopyr	97.3	102	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A88017
Included Lab Sample IDs: 2043271

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

Reference Method: EPA 8321B
Run ID: A88023
Included Lab Sample IDs: 2043277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.1	92.6	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A88036
Included Lab Sample IDs: 2043268, 2043271

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A88037
Included Lab Sample IDs: 2043268, 2043271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.0	100	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A88042
Included Lab Sample IDs: 2043268, 2043271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88043

Included Lab Sample IDs: 2043268

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

Reference Method: SM 2320 B-97

Run ID: A88097

Included Lab Sample IDs: 2043267, 2043270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.5	P/P	90 - 110
Total Alkalinity	97.9	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88097

Included Lab Sample IDs: 2043267, 2043270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	99.1	100	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	SMP
EPA 180.1 Rev. 2.0	Turbidity					2.32
EPA 300.0 Rev. 2.1	Chloride	98.3	98.0	100		0.659
	Sulfate	98.8	98.5	98.4		0.561
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	93.1	101		
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5				4.95
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	101		0.989
	NO ₂ NO ₃ -N	99.0	99.2			0.366
EPA 365.1 Rev. 2.0	Total-P	104	106	104		0.564
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	97.6	99.3		1.65
EPA 8321B	2,4-D	85.1	107	120		1.09
	Acesulfame K	94.5	137	131		11.0
	Acetaminophen	114	130	130		4.13
	Bentazon	72.6	53.3	62.0		0.135
	Carbamazepine	80.4	79.7	81.3		15.2
	Diuron	69.6	61.7	64.9		1.96
	Fenuron	101	81.5	84.7		5.07
	Fluridone	107	105	102		3.92
	Hydrocodone	98.6	84.1	85.3		2.98
	Ibuprofen	78.4	72.3	66.9		1.37
	Imazapyr	77.8				7.79
	Imidacloprid	108	125	128		20.5
	Linuron	76.9	67.2	68.2		2.12
	MCPP	113	134	129		1.51
	Naproxen	91.5	86.6	59.7		4.01
	Primidone	80.0	79.8	131		36.8
	Pyraclostrobin	71.7	54.7	53.1		48.9
	Sucralose	97.8	85.2	101		2.97
	Triclopyr	72.1	79.2	78.2		16.6
SM 2120 B	Color (true)	98.1				1.20
SM 2320 B-97	Total Alkalinity	99.9				1.49
SM 2540 C-97	TDS					1.03
SM 4500 F-C-97	Fluoride	97.9	98.6	98.0		3.22
SM 5310 B-00	Organic Carbon	94.8	98.6	95.6		0.530
						2.03

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2043267, 2043270
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2043267, 2043270
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2043267, 2043270
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2043268, 2043271
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2043268, 2043271
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2043268, 2043271
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2043268, 2043271
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2043269, 2043272
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2043277
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2043277

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2120 B / E31780	True Color measured at 450 nm	2043267, 2043270
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2043267, 2043270
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2043267, 2043270
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2043267, 2043270
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2043267, 2043270
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2043268, 2043271

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	11/21/2018			11/21/2018 15:37	Megan Treadwell	2043267, 2043270
EPA 300.0 Rev. 2.1	11/21/2018			12/01/2018 07:20	Lipi Saha	2043267
	11/21/2018			12/01/2018 07:32	Lipi Saha	2043270
EPA 350.1 Rev. 2.0	11/21/2018			11/29/2018 10:31	Ping Hua	2043268
	11/21/2018			11/29/2018 10:33	Ping Hua	2043271
EPA 351.2 Rev. 2.0	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:23	Joseph Suarez	2043268
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:25	Joseph Suarez	2043271
EPA 353.2 Rev. 2.0	11/21/2018			11/28/2018 14:23	Lauren Bottorf	2043271
	11/21/2018			11/29/2018 11:46	Lauren Bottorf	2043268
EPA 365.1 Rev. 2.0	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 11:24	Beverly Y. Sanders	2043268
	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 11:27	Beverly Y. Sanders	2043271
EPA 365.1 Rev. 2.0 dissolved	11/21/2018			11/21/2018 15:55	Jhamieka S. Greenwood	2043269, 2043272
EPA 8321B	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/21/2018 16:02	Rebecca Ware	2043277
	11/21/2018	11/21/2018 11:45	Rebecca Ware	11/28/2018 13:36	Rebecca Ware	2043277
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 06:13	Juyoung Kim	2043277
SM 2120 B	11/21/2018			11/21/2018 16:02	Chelsea Hernandez	2043270
	11/21/2018			11/21/2018 16:20	Chelsea Hernandez	2043267
SM 2320 B-97	11/21/2018			11/30/2018 02:39	Dale L. Simmons	2043270
	11/21/2018			11/30/2018 06:18	Dale L. Simmons	2043267
SM 2540 C-97	11/21/2018			11/26/2018 16:02	Yijie Li	2043267, 2043270
SM 2540 D-97	11/21/2018			11/26/2018 16:02	Yijie Li	2043267, 2043270
SM 4500 F-C-97	11/21/2018			11/30/2018 02:31	Dale L. Simmons	2043270
	11/21/2018			11/30/2018 06:18	Dale L. Simmons	2043267
SM 5310 B-00	11/21/2018			11/28/2018 20:31	Megan Treadwell	2043268
	11/21/2018			11/28/2018 20:44	Megan Treadwell	2043271