

Chemical Analysis Report

SW-DIST-2020-08-21-02

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

Event Description: **Mizelle, Owens, McDonald, Chito, Gilley**
Request ID: **RQ-2020-06-22-08**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 10-SEP-2020 09:54



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: McDonald Branch @ Thompson Rd

Collection Date/Time: 08/20/2020 11:30

Field ID: G2SW0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191751	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P386412	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P386940	
		Sulfate	18		mg SO4/L	P386942	
	SM 2120 B-2011	Color (true)	63		PCU	P386419	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P386492	
	SM 2540 C-2011	TDS	150		mg/L	P386801	
	SM 2540 D-2011	TSS	2	U	mg/L	P386796	
2191753	SM 4500 F-C-2011	Fluoride	0.26		mg F/L	P386498	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P386445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P386608	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.61		mg N/L	P386508	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P386471	
2191755	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P386595	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P386426	
2191761	EPA 8321B	2,4-D	0.0020	U	ug/L	P386554	
		Acesulfame K**	0.10	U	ug/L	P386464	MS
		AMPA**	0.10	U	ug/L	P386464	
		Sucralose**	0.036	I	ug/L	P386464	
		Acetaminophen**	0.0080	U	ug/L	P386554	
		Acetamiprid**	0.0020	U	ug/L	P386554	
		Endothall**	0.25	U	ug/L	P386464	
		Glufosinate**	0.10	U	ug/L	P386464	
		Glyphosate**	0.10	U	ug/L	P386464	
		Afidopyrophen**	0.0020	U	ug/L	P386554	
		Bentazon	8.0E-04	U	ug/L	P386554	
		Benzovindiflupyr**	0.0020	U	ug/L	P386554	
		Carbamazepine**	8.0E-04	U	ug/L	P386554	
		Clothianidin**	0.0020	U	ug/L	P386554	
		Dinotefuran**	0.0020	U	ug/L	P386554	
		Diuron	0.0020	U	ug/L	P386554	
		Fenuron	0.016	U	ug/L	P386554	
		Fluridone**	0.0037		ug/L	P386554	
		Imazapyr**	0.0040	U	ug/L	P386554	
		Hydrocodone**	0.0020	U	ug/L	P386554	
		Ibuprofen**	0.020	U	ug/L	P386554	
		Imidacloprid	0.0020	U	ug/L	P386554	
		Linuron	0.0040	U	ug/L	P386554	
		Mandestrobin**	0.0020	U	ug/L	P386554	
		MCPD	0.0020	U	ug/L	P386554	
		Naproxen**	0.0080	U	ug/L	P386554	
		Primidone**	0.0040	U	ug/L	P386554	
		Pyraclostrobin**	0.0020	U	ug/L	P386554	
		Thiamethoxam**	0.0020	U	ug/L	P386554	

Field ID: G2SW0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191761	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P386554	
		Triclopyr**	0.0040	U	ug/L	P386554	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Chito Branch in Park

Collection Date/Time: 08/20/2020 12:00

Field ID: G2SW0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191752	EPA 180.1 Rev. 2.0	Turbidity	2.4	A	NTU	P386412	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P386940	
		Sulfate	24		mg SO4/L	P386942	
	SM 2120 B-2011	Color (true)	150		PCU	P386419	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P386492	
	SM 2540 C-2011	TDS	198	A	mg/L	P386801	
	SM 2540 D-2011	TSS	2	IA	mg/L	P386796	
	SM 4500 F-C-2011	Fluoride	0.37		mg F/L	P386498	
2191754	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P386445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P386608	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P386508	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P386471	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P386595	
2191756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.33		mg P/L	P386426	
2191762	EPA 8321B	2,4-D	0.25	U	ug/L	P386554	
		Acesulfame K**	0.10	UJ	ug/L	P386464	MS
		AMPA**	19		ug/L	P386464	
		Sucralose**	0.20		ug/L	P386464	
		Acetaminophen**	1.0	U	ug/L	P386554	
		Endothall**	0.25	U	ug/L	P386464	
		Acetamiprid**	0.25	U	ug/L	P386554	
		Glufosinate**	0.10	U	ug/L	P386464	
		Glyphosate**	3.9		ug/L	P386464	
		Afidopyropen**	0.25	U	ug/L	P386554	
		Bentazon	9.5		ug/L	P386554	
		Benzovindiflupyr**	0.25	U	ug/L	P386554	
		Carbamazepine**	0.10	U	ug/L	P386554	
		Clothianidin**	0.88	I	ug/L	P386554	
		Dinotefuran**	0.25	U	ug/L	P386554	
		Diuron	0.25	U	ug/L	P386554	
		Fenuron	2.0	U	ug/L	P386554	
		Fluridone**	0.10	U	ug/L	P386554	
		Imazapyr**	3.9		ug/L	P386554	
		Hydrocodone**	0.25	U	ug/L	P386554	
		Ibuprofen**	2.5	U	ug/L	P386554	
		Imidacloprid	13		ug/L	P386554	
		Linuron	0.50	U	ug/L	P386554	
		Mandestrobin**	0.25	U	ug/L	P386554	
		MCPP	0.25	U	ug/L	P386554	
		Naproxen**	1.0	U	ug/L	P386554	
		Primidone**	0.50	U	ug/L	P386554	
		Pyraclostrobin**	0.25	U	ug/L	P386554	
		Thiamethoxam**	1.8		ug/L	P386554	

Field ID: G2SW0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191762	EPA 8321B	Tolfenpyrad**	0.25	U	ug/L	P386554	
		Triclopyr**	0.50	U	ug/L	P386554	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386412

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386940

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386942

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386445

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386608

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386508

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386471

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386426

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

Reference Method: EPA 8321B
Batch ID: P386464

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P386464

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P386554

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P386419

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P386492

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

Reference Method: SM 2540 C-2011
Batch ID: P386801

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P386796

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386498

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P386595

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: P386940

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386942

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386445

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: P386608

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: P386508

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386471

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386426

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

Reference Method: EPA 8321B
Batch ID: P386464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.6		P	40 - 150
AMPA	83.4		P	40 - 150
Endothall	83.4		P	40 - 150
Glufosinate	89.3		P	40 - 150
Glyphosate	77.4		P	40 - 140
Sucralose	99.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	128		P	30 - 160
Acetaminophen	85.6		P	30 - 160
Acetamiprid	77.4		P	30 - 160
Afidopyropen	55.8		P	30 - 160
Bentazon	74.7		P	30 - 160
Benzovindiflupyr	76.5		P	30 - 160
Carbamazepine	63.3		P	30 - 160
Clothianidin	79.6		P	30 - 160
Dinotefuran	97.3		P	30 - 160
Diuron	67.4		P	30 - 160
Fenuron	94.2		P	30 - 160
Fluridone	77.8		P	30 - 160
Hydrocodone	84.2		P	30 - 160
Ibuprofen	95.3		P	30 - 160
Imazapyr	92.1		P	30 - 160
Imidacloprid	95.7		P	30 - 160
Linuron	72.0		P	30 - 160
Mandestrobin	78.2		P	30 - 160
MCPP	135		P	30 - 160
Naproxen	89.5		P	30 - 160
Primidone	86.4		P	30 - 160
Pyraclostrobin	62.6		P	30 - 160
Thiamethoxam	97.2		P	30 - 160
Tolfenpyrad	45.9		P	30 - 160
Triclopyr	114		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P386419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P386492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P386498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P386595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191693	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191693	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P386445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191730	Ammonia-N	97.2	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P386608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191713	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P386508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191733	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P386471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191619	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P386426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191695	O-Phosphate-P	98.1	96.6	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P386464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191762	Acesulfame K	36.9	37.9	F/F	40 - 150
2191762	AMPA	109	79.8	P/P	40 - 150
2191762	Endothall	83.5	81.7	P/P	40 - 150
2191762	Glufosinate	76.7	89.3	P/P	40 - 150
2191762	Glyphosate	73.9	82.5	P/P	40 - 140
2191762	Sucralose	61.8	53.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P386554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191761	2,4-D	121	128	P/P	30 - 160
2191761	Acetaminophen	103	106	P/P	30 - 160
2191761	Acetamiprid	83.4	85.8	P/P	30 - 160
2191761	Afidopyropen	55.4	56.4	P/P	30 - 160
2191761	Bentazon	70.3	81.2	P/P	30 - 160
2191761	Benzovindiflupyr	73.1	73.1	P/P	30 - 160
2191761	Carbamazepine	59.1	60.4	P/P	30 - 160
2191761	Clothianidin	95.7	92.8	P/P	30 - 160
2191761	Dinotefuran	112	113	P/P	30 - 160
2191761	Diuron	60.4	64.9	P/P	30 - 160
2191761	Fenuron	86.6	90.1	P/P	30 - 160
2191761	Fluridone	78.0	73.2	P/P	30 - 160
2191761	Hydrocodone	88.7	90.3	P/P	30 - 160
2191761	Ibuprofen	75.0	88.3	P/P	30 - 160
2191761	Imazapyr	103	132	P/P	30 - 160
2191761	Imidacloprid	142	132	P/P	30 - 160
2191761	Linuron	69.0	70.5	P/P	30 - 160
2191761	Mandestrobin	75.3	76.5	P/P	30 - 160
2191761	MCP	134	132	P/P	30 - 160
2191761	Naproxen	89.4	76.4	P/P	30 - 160
2191761	Primidone	107	108	P/P	30 - 160
2191761	Pyraclostrobin	62.4	61.4	P/P	30 - 160
2191761	Thiamethoxam	128	127	P/P	30 - 160
2191761	Tolfenpyrad	47.8	58.3	P/P	30 - 160
2191761	Triclopyr	103	120	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P386498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191848	Fluoride	100	98.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
 Batch ID: P386595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191946	Organic Carbon	102	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191752	Turbidity	7.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191693	Chloride	0.962	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191693	Sulfate	1.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191730	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191713	Kjeldahl Nitrogen	0.483	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191733	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191619	Total-P	1.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191695	O-Phosphate-P	1.54	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P386464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191762	Acesulfame K	2.54	Spike	P	0 - 30
2191762	AMPA	1.54	Spike	P	0 - 30
2191762	Endothall	2.19	Spike	P	0 - 30
2191762	Glufosinate	15.2	Spike	P	0 - 30
2191762	Glyphosate	1.83	Spike	P	0 - 30
2191762	Sucralose	13.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191761	2,4-D	5.72	Spike	P	0 - 30
2191761	Acetaminophen	3.22	Spike	P	0 - 30
2191761	Acetamiprid	2.87	Spike	P	0 - 30
2191761	Afidopyropen	1.87	Spike	P	0 - 30
2191761	Bentazon	14.5	Spike	P	0 - 30
2191761	Benzovindiflupyr	0.00820	Spike	P	0 - 30
2191761	Carbamazepine	2.21	Spike	P	0 - 30
2191761	Clothianidin	3.07	Spike	P	0 - 30
2191761	Dinotefuran	0.801	Spike	P	0 - 30
2191761	Diuron	7.21	Spike	P	0 - 30
2191761	Fenuron	3.97	Spike	P	0 - 30
2191761	Fluridone	5.15	Spike	P	0 - 30
2191761	Hydrocodone	1.83	Spike	P	0 - 30
2191761	Ibuprofen	16.3	Spike	P	0 - 30
2191761	Imazapyr	25.2	Spike	P	0 - 30
2191761	Imidacloprid	6.80	Spike	P	0 - 30
2191761	Linuron	2.18	Spike	P	0 - 30
2191761	Mandestrobin	1.53	Spike	P	0 - 30
2191761	MCPP	1.37	Spike	P	0 - 30
2191761	Naproxen	15.7	Spike	P	0 - 30
2191761	Primidone	0.789	Spike	P	0 - 30
2191761	Pyraclostrobin	1.70	Spike	P	0 - 30
2191761	Thiamethoxam	0.828	Spike	P	0 - 30
2191761	Tolfenpyrad	19.6	Spike	P	0 - 30
2191761	Triclopyr	14.8	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P386419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191712	Color (true)	2.40	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P386492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191848	Total Alkalinity	1.45	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P386801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191752	TDS	6.55	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P386498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191848	Fluoride	1.42	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P386595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191946	Organic Carbon	0.0720	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2191761
Field Sample ID: G2SW0093

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.3	P	30 - 160
EPA 8321B	Diuron-d6	57.7	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.8	P	30 - 160
EPA 8321B	Primidone-d5	93.5	P	30 - 160
EPA 8321B	Sucralose-d6	48.8	P	30 - 160
EPA 8321B	Sucralose-d6	48.8	P	30 - 160

Lab Sample ID: 2191762
Field Sample ID: G2SW0133

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.1	P	30 - 160
EPA 8321B	Diuron-d6	53.0	P	30 - 160
EPA 8321B	Endothall-d6	96.4	P	30 - 160
EPA 8321B	Endothall-d6	96.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	97.5	P	30 - 160
EPA 8321B	Primidone-d5	80.1	P	30 - 160
EPA 8321B	Sucralose-d6	40.9	P	30 - 160
EPA 8321B	Sucralose-d6	40.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100543

Included Lab Sample IDs: 2191751, 2191752

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100591

Included Lab Sample IDs: 2191751, 2191752

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

Reference Method: SM 2120 B-2011

Run ID: A100594

Included Lab Sample IDs: 2191751, 2191752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	98.5	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100595

Included Lab Sample IDs: 2191755, 2191756

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100600

Included Lab Sample IDs: 2191753, 2191754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100627

Included Lab Sample IDs: 2191751, 2191752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	100	P/P	90 - 110
Total Alkalinity	97.1	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100627

Included Lab Sample IDs: 2191751, 2191752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	104	P/P	90 - 110
Fluoride	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100631

Included Lab Sample IDs: 2191753, 2191754

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

Reference Method: EPA 8321B

Run ID: A100632

Included Lab Sample IDs: 2191761, 2191762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	116	79.5	P/P	60 - 160
Acesulfame K	79.5	81.2	P/P	60 - 160
Endothall	88.9	89.4	P/P	60 - 160
Endothall	89.4	94.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A100638

Included Lab Sample IDs: 2191761, 2191762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	85.2	89.1	P/P	60 - 160
AMPA	89.1	91.2	P/P	60 - 160
Glufosinate	101	96.9	P/P	60 - 160
Glufosinate	84.1	101	P/P	60 - 160
Glyphosate	79.2	81.9	P/P	60 - 160
Glyphosate	81.9	80.3	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100645

Included Lab Sample IDs: 2191753, 2191754

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

Reference Method: SM 5310 B-2011

Run ID: A100665

Included Lab Sample IDs: 2191753, 2191754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	99.6	P/P	90 - 110
Organic Carbon	99.6	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100700

Included Lab Sample IDs: 2191753, 2191754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100703

Included Lab Sample IDs: 2191761, 2191762

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

Reference Method: EPA 8321B

Run ID: A100703

Included Lab Sample IDs: 2191761, 2191762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.2	95.5	P/P	60 - 160
Sucralose	98.2	82.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A100758

Included Lab Sample IDs: 2191761, 2191762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	119	115	P/P	50 - 150
Acetaminophen	118	125	P/P	60 - 160
Acetamiprid	126	127	P/P	50 - 150
Afidopyropen	82.3	94.8	P/P	50 - 150
Bentazon	94.1	142	P/P	50 - 160
Benzovindiflupyr	122	122	P/P	50 - 150
Carbamazepine	109	112	P/P	60 - 150
Clothianidin	112	109	P/P	60 - 150
Dinotefuran	115	111	P/P	50 - 150
Diuron	125	112	P/P	60 - 160
Fenuron	121	129	P/P	60 - 150
Fluridone	87.8	112	P/P	60 - 160
Hydrocodone	117	118	P/P	60 - 150
Ibuprofen	143	71.1	P/P	50 - 160
Imazapyr	106	105	P/P	50 - 150
Imidacloprid	104	115	P/P	60 - 150
Linuron	117	124	P/P	60 - 150
Mandestrobin	124	127	P/P	50 - 150
MCPP	119	140	P/P	50 - 150
Naproxen	107	138	P/P	50 - 160
Primidone	106	124	P/P	60 - 150
Pyraclostrobin	112	119	P/P	60 - 150
Thiamethoxam	135	131	P/P	50 - 150
Tolfenpyrad	111	115	P/P	60 - 150
Triclopyr	116	118	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				7.53	
EPA 300.0 Rev. 2.1	Chloride	100	101		0.962	
	Sulfate	101	101		1.09	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	97.2	98.2		1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	101		0.483
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	100	100		0.499
EPA 365.1 Rev. 2.0	Total-P	103	104	106		1.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.1	96.6		1.54
EPA 8321B	2,4-D	128	121	128		5.72
	Acesulfame K	95.6	36.9	37.9		2.54
	Acetaminophen	85.6	103	106		3.22
	Acetamiprid	77.4	83.4	85.8		2.87
	Afidopyropen	55.8	55.4	56.4		1.87
	AMPA	83.4	109	79.8		1.54
	Bentazon	74.7	70.3	81.2		14.5
	Benzovindiflupyr	76.5	73.1	73.1		0.0082
	Carbamazepine	63.3	59.1	60.4		2.21
	Clothianidin	79.6	95.7	92.8		3.07
	Dinotefuran	97.3	112	113		0.801
	Diuron	67.4	60.4	64.9		7.21
	Endothall	83.4	83.5	81.7		2.19
	Fenuron	94.2	86.6	90.1		3.97
	Fluridone	77.8	78.0	73.2		5.15
	Glufosinate	89.3	76.7	89.3		15.2
	Glyphosate	77.4	73.9	82.5		1.83
	Hydrocodone	84.2	88.7	90.3		1.83
	Ibuprofen	95.3	75.0	88.3		16.3
	Imazapyr	92.1	103	132		25.2
	Imidacloprid	95.7	142	132		6.80
	Linuron	72.0	69.0	70.5		2.18
	Mandestrobin	78.2	75.3	76.5		1.53
	MCPP	135	134	132		1.37
	Naproxen	89.5	89.4	76.4		15.7
	Primidone	86.4	107	108		0.789
	Pyraclostrobin	62.6	62.4	61.4		1.70
	Sucralose	99.9	61.8	53.2		13.2
	Thiamethoxam	97.2	128	127		0.828
	Tolfenpyrad	45.9	47.8	58.3		19.6
	Triclopyr	114	103	120		14.8
SM 2120 B-2011	Color (true)	97.8			2.40	
SM 2320 B-2011	Total Alkalinity	101			1.45	
SM 2540 C-2011	TDS				6.55	
SM 4500 F-C-2011	Fluoride	100	100	98.4		1.42
SM 5310 B-2011	Organic Carbon	100	102	101		0.0720

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2191751, 2191752
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2191751, 2191752
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2191751, 2191752
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2191753, 2191754
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2191753, 2191754

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2191753, 2191754
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2191753, 2191754
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2191755, 2191756
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2191761, 2191762
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2191761, 2191762
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2191751, 2191752
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2191751, 2191752
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2191751, 2191752
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2191751, 2191752
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2191751, 2191752
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2191753, 2191754

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	08/21/2020			08/21/2020 14:31	Yen Ta	2191751, 2191752
EPA 300.0 Rev. 2.1	08/21/2020			08/22/2020 00:31	Julia Storbeck	2191751
	08/21/2020			08/22/2020 00:43	Julia Storbeck	2191752
EPA 350.1 Rev. 2.0	08/21/2020			08/23/2020 20:25	Ping Hua	2191753
	08/21/2020			08/23/2020 20:26	Ping Hua	2191754
EPA 351.2 Rev. 2.0	08/21/2020	08/27/2020 09:15	Sima Feizi	08/28/2020 09:53	Virginia P. Brown	2191753
	08/21/2020	08/27/2020 09:15	Sima Feizi	08/28/2020 09:54	Virginia P. Brown	2191754
EPA 353.2 Rev. 2.0	08/21/2020			08/25/2020 09:05	Beverly Y. Sanders	2191753
	08/21/2020			08/25/2020 09:06	Beverly Y. Sanders	2191754
EPA 365.1 Rev. 2.0	08/21/2020	08/24/2020 12:04	Yen Ta	08/25/2020 14:56	Benjamin T. Nordmann	2191753
	08/21/2020	08/24/2020 12:04	Yen Ta	08/25/2020 14:57	Benjamin T. Nordmann	2191754
EPA 365.1 Rev. 2.0 dissolved	08/21/2020			08/21/2020 15:47	Virginia P. Brown	2191755
	08/21/2020			08/21/2020 15:48	Virginia P. Brown	2191756
EPA 8321B	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/24/2020 17:25	Rebecca Ware	2191762
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/24/2020 19:29	Rebecca Ware	2191761
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/25/2020 12:06	Rebecca Ware	2191762
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/25/2020 13:44	Rebecca Ware	2191761
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/25/2020 14:53	Rebecca Ware	2191762
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/27/2020 11:55	Rebecca Ware	2191762
	08/21/2020	08/24/2020 15:15	Rebecca Ware	08/27/2020 13:42	Rebecca Ware	2191761
	08/21/2020	08/27/2020 08:30	Hoor Shaik	08/29/2020 15:12	Juyoung Kim	2191761
	08/21/2020	08/27/2020 08:30	Hoor Shaik	08/29/2020 15:47	Juyoung Kim	2191762
SM 2120 B-2011	08/21/2020			08/21/2020 15:49	Benjamin T. Nordmann	2191751
	08/21/2020			08/21/2020 16:03	Benjamin T. Nordmann	2191752
SM 2320 B-2011	08/21/2020			08/24/2020 20:12	Dale L. Simmons	2191751
	08/21/2020			08/24/2020 21:00	Dale L. Simmons	2191752
SM 2540 C-2011	08/21/2020			08/24/2020 13:35	Yijie Li	2191751, 2191752
SM 2540 D-2011	08/21/2020			08/24/2020 13:35	Yijie Li	2191751, 2191752
SM 4500 F-C-2011	08/21/2020			08/24/2020 20:12	Dale L. Simmons	2191751
	08/21/2020			08/24/2020 21:00	Dale L. Simmons	2191752
SM 5310 B-2011	08/21/2020			08/26/2020 18:45	David Boose	2191753
	08/21/2020			08/26/2020 19:24	David Boose	2191754