

Chemical Analysis Report

SW-DIST-2020-08-14-01

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

Event Description: **Myakka, Owen & Mobly**
Request ID: **RQ-2020-08-10-52**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 08-SEP-2020 12:44



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: Owen Creek

Collection Date/Time: 08/13/2020 12:00

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2190429	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P386066	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P386275	
		Sulfate	190		mg SO4/L	P386379	
	SM 2120 B-2011	Color (true)	160		PCU	P386074	
	SM 2320 B-2011	Total Alkalinity	50		mg CaCO3/L	P386144	
	SM 2540 C-2011	TDS	420		mg/L	P386502	
	SM 2540 D-2011	TSS	4	I	mg/L	P386389	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P386329	
2190431	EPA 350.1 Rev. 2.0	Ammonia-N	1.2		mg N/L	P386427	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P386315	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.46		mg N/L	P386150	
	EPA 365.1 Rev. 2.0	Total-P	0.83		mg P/L	P386108	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P386332	
2190433	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.75		mg P/L	P386069	
2190436	EPA 8321B	2,4-D	0.033		ug/L	P386102	
		Acesulfame K**	0.10	UJ	ug/L	P386124	MS
		AMPA**	0.51		ug/L	P386124	
		Sucralose**	0.048	J	ug/L	P386124	MS
		Acetaminophen**	0.0080	U	ug/L	P386102	
		Endothall**	0.25	U	ug/L	P386124	
		Acetamiprid**	0.0020	U	ug/L	P386102	
		Glufosinate**	0.10	U	ug/L	P386124	
		Glyphosate**	0.98		ug/L	P386124	
		Afidopyropen**	0.0020	U	ug/L	P386102	
		Bentazon	0.0011	I	ug/L	P386102	
		Benzovindiflupyr**	0.0020	U	ug/L	P386102	
		Carbamazepine**	8.0E-04	U	ug/L	P386102	
		Clothianidin**	0.0020	U	ug/L	P386102	
		Dinotefuran**	0.020		ug/L	P386102	
		Diuron	0.0020	U	ug/L	P386102	
		Fenuron	0.016	U	ug/L	P386102	
		Fluridone**	8.0E-04	U	ug/L	P386102	
		Imazapyr**	0.0040	U	ug/L	P386102	
		Hydrocodone**	0.0020	U	ug/L	P386102	
		Ibuprofen**	0.020	U	ug/L	P386102	
		Imidacloprid	0.048		ug/L	P386102	
		Linuron	0.0040	U	ug/L	P386102	
		Mandestrobin**	0.0020	U	ug/L	P386102	
		MCP	0.0024	I	ug/L	P386102	
		Naproxen**	0.0080	U	ug/L	P386102	
		Primidone**	0.0040	U	ug/L	P386102	
		Pyraclostrobin**	0.0020	U	ug/L	P386102	
		Thiamethoxam**	0.0029	I	ug/L	P386102	

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2190436	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P386102	
		Triclopyr**	0.0040	U	ug/L	P386102	

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.

Sample Location: Mobley Ditch At 70

Collection Date/Time: 08/13/2020 11:30

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2190428	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P386066	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P386275	
		Sulfate	39		mg SO4/L	P386279	
	SM 2120 B-2011	Color (true)	520		PCU	P386074	
	SM 2320 B-2011	Total Alkalinity	149		mg CaCO3/L	P386144	
	SM 2540 C-2011	TDS	596		mg/L	P386502	
	SM 2540 D-2011	TSS	5	I	mg/L	P386389	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P386329	
2190430	EPA 350.1 Rev. 2.0	Ammonia-N	2.6		mg N/L	P386427	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	7.0		mg N/L	P386315	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P386150	
	EPA 365.1 Rev. 2.0	Total-P	3.6		mg P/L	P386108	
	SM 5310 B-2011	Organic Carbon	49		mg C/L	P386332	
2190432	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	3.4		mg P/L	P386069	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386066

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386275

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386279

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386379

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386427

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386315

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386150

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386108

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386069

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: P386102

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: EPA 8321B
Batch ID: P386124

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
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P386074

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P386144

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P386502

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P386389

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386329

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P386332

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: P386275

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386279

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386379

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386427

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386315

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: P386150

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386108

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386069

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

Reference Method: EPA 8321B
Batch ID: P386102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
Acetaminophen	84.1		P	30 - 160
Acetamiprid	94.7		P	30 - 160
Afidopyropen	53.4		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	68.1		P	30 - 160
Benzovindiflupyr	68.7		P	30 - 160
Carbamazepine	62.0		P	30 - 160
Clothianidin	76.0		P	30 - 160
Dinotefuran	84.7		P	30 - 160
Diuron	53.8		P	30 - 160
Fenuron	109		P	30 - 160
Fluridone	79.3		P	30 - 160
Hydrocodone	104		P	30 - 160
Ibuprofen	77.6		P	30 - 160
Imazapyr	80.0		P	30 - 160
Imidacloprid	111		P	30 - 160
Linuron	64.4		P	30 - 160
Mandestrobin	78.6		P	30 - 160
MCPP	119		P	30 - 160
Naproxen	83.8		P	30 - 160
Primidone	78.7		P	30 - 160
Pyraclostrobin	70.4		P	30 - 160
Thiamethoxam	80.7		P	30 - 160
Tolfenpyrad	58.1		P	30 - 160
Triclopyr	86.4		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	68.9		P	40 - 150
AMPA	94.3		P	40 - 150
Endothall	91.0		P	40 - 150
Glufosinate	91.5		P	40 - 150
Glyphosate	80.6		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P386074

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

Reference Method: SM 2320 B-2011
Batch ID: P386144

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

Reference Method: SM 4500 F-C-2011
Batch ID: P386329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	90 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P386332

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190230	Chloride	101		P	90 - 110
2190289	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190230	Sulfate	103		P	90 - 110
2190289	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190476	Sulfate	98.7		P	90 - 110
2190685	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190680	Ammonia-N	99.0	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190290	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190290	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190408	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190293	O-Phosphate-P	97.6	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P386102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190436	2,4-D	93.2	104	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190436	Acetaminophen	70.1	85.7	P/P	30 - 160
2190436	Acetamiprid	75.0	72.7	P/P	30 - 160
2190436	Afidopyropen	45.0	53.0	P/P	30 - 160
2190436	Bentazon	30.9	36.0	P/P	30 - 160
2190436	Benzovindiflupyr	63.0	68.3	P/P	30 - 160
2190436	Carbamazepine	47.4	48.6	P/P	30 - 160
2190436	Clothianidin	54.5	59.3	P/P	30 - 160
2190436	Dinotefuran	55.9	65.8	P/P	30 - 160
2190436	Diuron	39.8	44.7	P/P	30 - 160
2190436	Fenuron	73.6	79.1	P/P	30 - 160
2190436	Fluridone	78.4	84.3	P/P	30 - 160
2190436	Hydrocodone	64.5	83.0	P/P	30 - 160
2190436	Ibuprofen	62.0	76.4	P/P	30 - 160
2190436	Imazapyr	58.8	74.9	P/P	30 - 160
2190436	Imidacloprid	96.8	114	P/P	30 - 160
2190436	Linuron	47.0	57.9	P/P	30 - 160
2190436	Mandestrobin	72.5	79.7	P/P	30 - 160
2190436	MCPP	91.8	100	P/P	30 - 160
2190436	Naproxen	49.1	63.6	P/P	30 - 160
2190436	Primidone	59.5	61.9	P/P	30 - 160
2190436	Pyraclostrobin	62.6	70.9	P/P	30 - 160
2190436	Thiamethoxam	59.6	65.0	P/P	30 - 160
2190436	Tolfenpyrad	51.3	59.0	P/P	30 - 160
2190436	Triclopyr	73.1	88.6	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190436	Acesulfame K	30.1	30.6	F/F	40 - 150
2190436	AMPA	85.9	78.4	P/P	40 - 150
2190436	Endothall	112	121	P/P	40 - 150
2190436	Glufosinate	83.3	94.0	P/P	40 - 150
2190436	Glyphosate	75.6	70.5	P/P	40 - 140
2190436	Sucralose	28.3	37.3	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P386329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190933	Fluoride	102	104	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P386332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190680	Organic Carbon	98.5	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190357	Turbidity	2.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190230	Chloride	1.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190230	Sulfate	1.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190476	Sulfate	1.34	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190680	Ammonia-N	0.264	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190290	Kjeldahl Nitrogen	2.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190290	NO2NO3-N	0.387	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190408	Total-P	0.284	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190293	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P386102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190436	2,4-D	7.78	Spike	P	0 - 30
2190436	Acetaminophen	20.0	Spike	P	0 - 30
2190436	Acetamiprid	3.09	Spike	P	0 - 30
2190436	Afidopyrophen	16.2	Spike	P	0 - 30
2190436	Bentazon	10.7	Spike	P	0 - 30
2190436	Benzovindiflupyr	8.00	Spike	P	0 - 30
2190436	Carbamazepine	2.49	Spike	P	0 - 30
2190436	Clothianidin	8.43	Spike	P	0 - 30
2190436	Dinotefuran	11.5	Spike	P	0 - 30
2190436	Diuron	11.7	Spike	P	0 - 30
2190436	Fenuron	7.17	Spike	P	0 - 30
2190436	Fluridone	7.29	Spike	P	0 - 30
2190436	Hydrocodone	25.1	Spike	P	0 - 30
2190436	Ibuprofen	20.7	Spike	P	0 - 30
2190436	Imazapyr	24.1	Spike	P	0 - 30
2190436	Imidacloprid	10.4	Spike	P	0 - 30
2190436	Linuron	20.6	Spike	P	0 - 30
2190436	Mandestrobin	9.49	Spike	P	0 - 30
2190436	MCPP	8.55	Spike	P	0 - 30
2190436	Naproxen	25.7	Spike	P	0 - 30
2190436	Primidone	4.07	Spike	P	0 - 30
2190436	Pyraclostrobin	12.5	Spike	P	0 - 30
2190436	Thiamethoxam	8.09	Spike	P	0 - 30
2190436	Tolfenpyrad	14.0	Spike	P	0 - 30
2190436	Triclopyr	19.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190436	Acesulfame K	1.68	Spike	P	0 - 30
2190436	AMPA	5.63	Spike	P	0 - 30
2190436	Endothall	7.91	Spike	P	0 - 30
2190436	Glufosinate	12.1	Spike	P	0 - 30
2190436	Glyphosate	2.95	Spike	P	0 - 30
2190436	Sucralose	25.9	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P386074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190357	Color (true)	1.02	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P386144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190288	Total Alkalinity	0.467	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P386502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190357	TDS	4.43	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P386329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190933	Fluoride	0.909	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P386332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190680	Organic Carbon	0.675	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2190436

Field Sample ID: G3SW0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	47.5	P	30 - 160
EPA 8321B	Diuron-d6	48.9	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.6	P	30 - 160
EPA 8321B	Primidone-d5	62.6	P	30 - 160
EPA 8321B	Sucralose-d6	74.0	P	30 - 160
EPA 8321B	Sucralose-d6	74.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100473

Included Lab Sample IDs: 2190428, 2190429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100474

Included Lab Sample IDs: 2190432, 2190433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.7	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A100475

Included Lab Sample IDs: 2190428, 2190429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: SM 2320 B-2011

Run ID: A100499

Included Lab Sample IDs: 2190428, 2190429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.9	P/P	90 - 110
Total Alkalinity	97.9	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100503

Included Lab Sample IDs: 2190436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.1	88.3	P/P	60 - 160
Glufosinate	95.5	95.6	P/P	60 - 160
Glyphosate	84.3	83.5	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100504

Included Lab Sample IDs: 2190430, 2190431

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100516

Included Lab Sample IDs: 2190430, 2190431

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100533

Included Lab Sample IDs: 2190436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	72.7	60.3	P/P	60 - 160
Endothall	94.6	106	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100543

Included Lab Sample IDs: 2190428, 2190429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	101	99.8	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100560

Included Lab Sample IDs: 2190428, 2190429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100563

Included Lab Sample IDs: 2190430, 2190431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	95.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100565

Included Lab Sample IDs: 2190436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	112	P/P	50 - 150
Acetaminophen	116	120	P/P	60 - 160
Acetamiprid	141	143	P/P	50 - 150
Afidopyropen	97.6	100	P/P	50 - 150
Bentazon	125	118	P/P	50 - 160
Benzovindiflupyr	100	107	P/P	50 - 150
Carbamazepine	108	104	P/P	60 - 150
Clothianidin	111	115	P/P	60 - 150
Dinotefuran	94.2	99.6	P/P	50 - 150
Diuron	111	108	P/P	60 - 160
Fenuron	138	137	P/P	60 - 150
Fluridone	117	116	P/P	60 - 160
Hydrocodone	135	141	P/P	60 - 150
Ibuprofen	113	94.9	P/P	50 - 160
Imazapyr	93.1	88.3	P/P	50 - 150
Imidacloprid	115	121	P/P	60 - 150
Linuron	109	121	P/P	60 - 150
Mandestrobin	113	113	P/P	50 - 150
MCPP	98.5	105	P/P	50 - 150
Naproxen	79.6	93.0	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100565

Included Lab Sample IDs: 2190436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	99.9	92.2	P/P	60 - 150
Pyraclostrobin	113	109	P/P	60 - 150
Thiamethoxam	107	113	P/P	50 - 150
Tolfenpyrad	110	113	P/P	60 - 150
Triclopyr	110	100	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100590

Included Lab Sample IDs: 2190430, 2190431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	100	P/P	90 - 110
Kjeldahl Nitrogen	93.8	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100597

Included Lab Sample IDs: 2190430, 2190431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	98.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100617

Included Lab Sample IDs: 2190436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.6	96.5	P/P	60 - 160

* 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				2.38	
EPA 300.0 Rev. 2.1	Chloride	101	101	98.2	1.24	
	Sulfate	103	103	101	1.53	
	Sulfate	97.5	98.7	98.7	1.34	
	Ammonia-N	96.2	99.0	99.4		0.264
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104	106		2.51
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	103	102		0.387
EPA 365.1 Rev. 2.0	Total-P	102	106	106		0.284
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.6	96.6		1.03
EPA 8321B	2,4-D	127	93.2	104		7.78
	Acesulfame K	68.9	30.1	30.6		1.68
	Acetaminophen	84.1	85.7	70.1		20.0
	Acetamiprid	94.7	75.0	72.7		3.09
	Afidopyropen	53.4	45.0	53.0		16.2
	AMPA	94.3	85.9	78.4		5.63
	Bentazon	68.1	30.9	36.0		10.7
	Benzovindiflupyr	68.7	63.0	68.3		8.00
	Carbamazepine	62.0	47.4	48.6		2.49
	Clothianidin	76.0	54.5	59.3		8.43
	Dinotefuran	84.7	65.8	55.9		11.5
	Diuron	53.8	39.8	44.7		11.7
	Endothall	91.0	112	121		7.91
	Fenuron	109	73.6	79.1		7.17
	Fluridone	79.3	78.4	84.3		7.29
	Glufosinate	91.5	83.3	94.0		12.1
	Glyphosate	80.6	75.6	70.5		2.95
	Hydrocodone	104	64.5	83.0		25.1
	Ibuprofen	77.6	62.0	76.4		20.7
	Imazapyr	80.0	58.8	74.9		24.1
	Imidacloprid	111	96.8	114		10.4
	Linuron	64.4	47.0	57.9		20.6
	Mandestrobin	78.6	72.5	79.7		9.49
	MCPP	119	91.8	100		8.55
	Naproxen	83.8	49.1	63.6		25.7
	Primidone	78.7	59.5	61.9		4.07
	Pyraclostrobin	70.4	62.6	70.9		12.5
	Sucralose	109	28.3	37.3		25.9
	Thiamethoxam	80.7	59.6	65.0		8.09
	Tolfenpyrad	58.1	51.3	59.0		14.0
	Triclopyr	86.4	73.1	88.6		19.2
SM 2120 B-2011	Color (true)	98.6			1.02	
SM 2320 B-2011	Total Alkalinity	104			0.467	
SM 2540 C-2011	TDS				4.43	
SM 4500 F-C-2011	Fluoride	102	102	104		0.909
SM 5310 B-2011	Organic Carbon	98.5	98.5	97.7		0.675

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2190428, 2190429
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2190428, 2190429
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2190428, 2190429
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2190430, 2190431

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2190430, 2190431
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2190430, 2190431
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2190430, 2190431
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2190432, 2190433
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2190436
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2190436
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2190428, 2190429
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2190428, 2190429
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2190428, 2190429
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2190428, 2190429
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2190428, 2190429
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2190430, 2190431

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	08/14/2020			08/14/2020 14:57	Yen Ta	2190428, 2190429
EPA 300.0 Rev. 2.1	08/14/2020			08/18/2020 17:49	Julia Storbeck	2190428
	08/14/2020			08/18/2020 18:02	Julia Storbeck	2190429
	08/14/2020			08/20/2020 16:52	Julia Storbeck	2190429
EPA 350.1 Rev. 2.0	08/14/2020			08/22/2020 16:00	Ping Hua	2190430
	08/14/2020			08/22/2020 16:01	Ping Hua	2190431
EPA 351.2 Rev. 2.0	08/14/2020	08/20/2020 11:10	Sima Feizi	08/21/2020 12:39	Jhamieka S. Greenwood	2190431
	08/14/2020	08/20/2020 11:10	Sima Feizi	08/21/2020 14:18	Jhamieka S. Greenwood	2190430
EPA 353.2 Rev. 2.0	08/14/2020			08/18/2020 08:56	Beverly Y. Sanders	2190430
	08/14/2020			08/18/2020 08:57	Beverly Y. Sanders	2190431
EPA 365.1 Rev. 2.0	08/14/2020	08/17/2020 11:03	Shengyu Wang	08/18/2020 14:17	Benjamin T. Nordmann	2190431
	08/14/2020	08/17/2020 11:03	Shengyu Wang	08/18/2020 14:42	Benjamin T. Nordmann	2190430
EPA 365.1 Rev. 2.0 dissolved	08/14/2020			08/14/2020 16:00	Virginia P. Brown	2190432
	08/14/2020			08/14/2020 16:02	Virginia P. Brown	2190433
EPA 8321B	08/14/2020	08/17/2020 13:30	Rebecca Ware	08/17/2020 14:11	Rebecca Ware	2190436
	08/14/2020	08/17/2020 13:30	Rebecca Ware	08/18/2020 11:10	Rebecca Ware	2190436
	08/14/2020	08/17/2020 13:30	Rebecca Ware	08/21/2020 15:53	Rebecca Ware	2190436
	08/14/2020	08/18/2020 09:00	Hoor Shaik	08/19/2020 12:48	Juyoung Kim	2190436
SM 2120 B-2011	08/14/2020			08/14/2020 16:24	Blanca Fach	2190428
	08/14/2020			08/14/2020 16:25	Blanca Fach	2190429
SM 2320 B-2011	08/14/2020			08/17/2020 16:54	Dale L. Simmons	2190429
	08/14/2020			08/17/2020 19:09	Dale L. Simmons	2190428
SM 2540 C-2011	08/14/2020			08/19/2020 15:39	Yijie Li	2190428, 2190429
SM 2540 D-2011	08/14/2020			08/19/2020 15:39	Yijie Li	2190428, 2190429
SM 4500 F-C-2011	08/14/2020			08/20/2020 04:27	Dale L. Simmons	2190428
	08/14/2020			08/20/2020 04:32	Dale L. Simmons	2190429
SM 5310 B-2011	08/14/2020			08/19/2020 20:54	David Boose	2190430
	08/14/2020			08/19/2020 21:07	David Boose	2190431