

Chemical Analysis Report

TLH-ROC-2020-09-10-01

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

Event Description: **Run 4a**
Request ID: **RQ-2020-08-24-42**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 29-SEP-2020 14:29

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Flat Creek @ SR 269

Collection Date/Time: 09/09/2020 12:00

Field ID: G2TLHR0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2195220	EPA 180.1 Rev. 2.0	Turbidity	8.1	A	NTU	P387217	
	EPA 300.0 Rev. 2.1	Chloride	4.1		mg Cl/L	P387417	
		Sulfate	0.73		mg SO4/L	P387419	
	SM 2120 B-2011	Color (true)	49	A	PCU	P387220	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P387352	
	SM 2540 C-2011	TDS	42		mg/L	P387620	
	SM 2540 D-2011	TSS	10	I	mg/L	P387624	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P387354	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P387297	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P387325	
2195221	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P387336	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P387670	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P387313	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.13		mg P/L	P387232	
	dissolved						
2195222	EPA 8321B	2,4-D	0.0020	U	ug/L	P387149	
		Acesulfame K**	0.10	U	ug/L	P387254	
		AMPA**	0.10	U	ug/L	P387254	
		Sucralose**	0.010	U	ug/L	P387254	
		Acetaminophen**	0.0080	U	ug/L	P387149	
		Acetamiprid**	0.0020	U	ug/L	P387149	
		Endothall**	0.25	U	ug/L	P387254	
		Glufosinate**	0.10	U	ug/L	P387254	
		Glyphosate**	0.10	U	ug/L	P387254	
		Afidopyropen**	0.0020	U	ug/L	P387149	
		Bentazon	8.0E-04	U	ug/L	P387149	
		Benzovindiflupyr**	0.0020	U	ug/L	P387149	
		Carbamazepine**	8.0E-04	U	ug/L	P387149	
		Clothianidin**	0.0020	U	ug/L	P387149	
		Dinotefuran**	0.0020	U	ug/L	P387149	
		Diuron	0.0020	U	ug/L	P387149	
		Fenuron	0.016	U	ug/L	P387149	
		Fluridone**	0.0042		ug/L	P387149	
		Imazapyr**	0.052		ug/L	P387149	
		Hydrocodone**	0.0020	U	ug/L	P387149	
		Ibuprofen**	0.020	U	ug/L	P387149	
		Imidacloprid	0.0020	U	ug/L	P387149	
		Linuron	0.0040	U	ug/L	P387149	
		Mandestrobin**	0.0020	U	ug/L	P387149	
		MCP	0.0020	U	ug/L	P387149	
		Naproxen**	0.0080	U	ug/L	P387149	
		Primidone**	0.0040	U	ug/L	P387149	
		Pyraclostrobin**	0.0020	U	ug/L	P387149	
		Thiamethoxam**	0.0020	U	ug/L	P387149	

Field ID: G2TLHR0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2195224	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P387149	
		Triclopyr**	0.0040	U	ug/L	P387149	

Ref. Method and Comment:

SM 2540 D-2011: 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 some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387217

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387325

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387336

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387670

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387232

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

Reference Method: EPA 8321B
Batch ID: P387149

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P387149

Component	Result	Code	Units
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: P387254

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: P387220

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P387352

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

Reference Method: SM 2540 C-2011
Batch ID: P387620

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P387624

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387354

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387313

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: P387417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387325

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387232

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

Reference Method: EPA 8321B
Batch ID: P387149

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	121		P	30 - 160
Acetaminophen	94.7		P	30 - 160
Acetamiprid	68.6		P	30 - 160
Afidopyropen	48.9		P	30 - 160
Bentazon	57.4		P	30 - 160
Benzovindiflupyr	69.4		P	30 - 160
Carbamazepine	61.4		P	30 - 160
Clothianidin	79.3		P	30 - 160
Dinotefuran	91.8		P	30 - 160
Diuron	54.6		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P387149

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	89.8		P	30 - 160
Fluridone	77.7		P	30 - 160
Hydrocodone	80.2		P	30 - 160
Ibuprofen	73.5		P	30 - 160
Imazapyr	94.5		P	30 - 160
Imidacloprid	98.6		P	30 - 160
Linuron	61.0		P	30 - 160
Mandestrobin	76.9		P	30 - 160
MCPP	115		P	30 - 160
Naproxen	68.3		P	30 - 160
Primidone	77.8		P	30 - 160
Pyraclostrobin	66.4		P	30 - 160
Thiamethoxam	76.6		P	30 - 160
Tolfenpyrad	51.8		P	30 - 160
Triclopyr	104		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P387254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	110		P	40 - 150
AMPA	60.4		P	40 - 150
Endothall	84.0		P	40 - 150
Glufosinate	97.6		P	40 - 150
Glyphosate	114		P	40 - 140
Sucralose	114		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P387220

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

Reference Method: SM 2320 B-2011
Batch ID: P387352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P387354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195220	Chloride	95.8		P	90 - 110
2195337	Chloride	92.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195220	Sulfate	95.3		P	90 - 110
2195337	Sulfate	93.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194717	Ammonia-N	96.6	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195221	NO2NO3-N	95.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195049	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195301	O-Phosphate-P	97.7	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P387149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194674	Acetaminophen	88.6	91.7	P/P	30 - 160
2194674	Acetamiprid	64.9	69.0	P/P	30 - 160
2194674	Afidopyropen	53.5	48.4	P/P	30 - 160
2194674	Benzovindiflupyr	61.7	60.8	P/P	30 - 160
2194674	Carbamazepine	52.0	55.2	P/P	30 - 160
2194674	Clothianidin	64.1	64.3	P/P	30 - 160
2194674	Dinotefuran	83.8	88.0	P/P	30 - 160
2194674	Diuron	42.9	45.9	P/P	30 - 160
2194674	Fenuron	70.1	71.3	P/P	30 - 160
2194674	Hydrocodone	71.8	74.9	P/P	30 - 160
2194674	Ibuprofen	60.0	67.1	P/P	30 - 160
2194674	Imidacloprid	123	128	P/P	30 - 160
2194674	Linuron	55.4	55.4	P/P	30 - 160
2194674	Mandestrobin	72.4	74.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P387149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194674	MCP	101	107	P/P	30 - 160
2194674	Naproxen	87.8	82.6	P/P	30 - 160
2194674	Primidone	71.9	76.3	P/P	30 - 160
2194674	Pyraclostrobin	59.2	61.6	P/P	30 - 160
2194674	Thiamethoxam	80.5	80.1	P/P	30 - 160
2194674	Tolfenpyrad	44.7	51.3	P/P	30 - 160
2194674	Triclopyr	96.3	113	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P387254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194750	Acesulfame K	104	103	P/P	40 - 150
2194750	AMPA	90.9	94.1	P/P	40 - 150
2194750	Endothall	70.3	79.6	P/P	40 - 150
2194750	Glufosinate	92.0	97.1	P/P	40 - 150
2194750	Glyphosate	120	114	P/P	40 - 140
2194750	Sucralose	95.4	96.9	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P387354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195370	Fluoride	96.3	96.3	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195298	Organic Carbon	97.9	99.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195220	Turbidity	2.09	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195337	Chloride	0.294	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195337	Sulfate	0.431	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194717	Ammonia-N	0.468	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195132	Kjeldahl Nitrogen	1.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195221	NO2NO3-N	0.198	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195049	Total-P	2.26	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195301	O-Phosphate-P	1.08	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P387149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194674	2,4-D	7.92	Spike	P	0 - 30
2194674	Acetaminophen	3.39	Spike	P	0 - 30
2194674	Acetamiprid	6.08	Spike	P	0 - 30
2194674	Afidopyropen	9.85	Spike	P	0 - 30
2194674	Bentazon	3.32	Spike	P	0 - 30
2194674	Benzovindiflupyr	1.46	Spike	P	0 - 30
2194674	Carbamazepine	5.40	Spike	P	0 - 30
2194674	Clothianidin	0.388	Spike	P	0 - 30
2194674	Dinotefuran	4.49	Spike	P	0 - 30
2194674	Diuron	5.74	Spike	P	0 - 30
2194674	Fenuron	1.58	Spike	P	0 - 30
2194674	Fluridone	6.46	Spike	P	0 - 30
2194674	Hydrocodone	4.24	Spike	P	0 - 30
2194674	Ibuprofen	11.2	Spike	P	0 - 30
2194674	Imazapyr	12.4	Spike	P	0 - 30
2194674	Imidacloprid	2.83	Spike	P	0 - 30
2194674	Linuron	0.0316	Spike	P	0 - 30
2194674	Mandestrobin	2.61	Spike	P	0 - 30
2194674	MCPP	5.39	Spike	P	0 - 30
2194674	Naproxen	6.15	Spike	P	0 - 30
2194674	Primidone	5.40	Spike	P	0 - 30
2194674	Pyraclostrobin	4.00	Spike	P	0 - 30
2194674	Thiamethoxam	0.361	Spike	P	0 - 30
2194674	Tolfenpyrad	13.5	Spike	P	0 - 30
2194674	Triclopyr	15.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P387254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194750	Acesulfame K	0.805	Spike	P	0 - 30
2194750	AMPA	3.07	Spike	P	0 - 30
2194750	Endothall	12.5	Spike	P	0 - 30
2194750	Glufosinate	5.47	Spike	P	0 - 30
2194750	Glyphosate	5.22	Spike	P	0 - 30
2194750	Sucralose	1.61	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P387220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195220	Color (true)	2.83	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P387352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195370	Total Alkalinity	2.53	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P387620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194755	TDS	1.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P387354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195370	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P387313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195298	Organic Carbon	0.810	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2195224

Field Sample ID: G2TLHR0020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.5	P	30 - 160
EPA 8321B	Diuron-d6	53.2	P	30 - 160
EPA 8321B	Endothall-d6	78.5	P	30 - 160
EPA 8321B	Endothall-d6	78.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.7	P	30 - 160
EPA 8321B	Primidone-d5	77.3	P	30 - 160
EPA 8321B	Sucralose-d6	82.3	P	30 - 160
EPA 8321B	Sucralose-d6	82.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100910

Included Lab Sample IDs: 2195220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A100911

Included Lab Sample IDs: 2195220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.9	98.7	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100920

Included Lab Sample IDs: 2195222

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100944

Included Lab Sample IDs: 2195221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100952

Included Lab Sample IDs: 2195221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100959

Included Lab Sample IDs: 2195221

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

Reference Method: EPA 8321B

Run ID: A100961

Included Lab Sample IDs: 2195224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	113	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A100972

Included Lab Sample IDs: 2195220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A100972

Included Lab Sample IDs: 2195220

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

Reference Method: EPA 8321B

Run ID: A100976

Included Lab Sample IDs: 2195224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	61.1	60.3	P/P	60 - 160
Glufosinate	103	98.8	P/P	60 - 160
Glyphosate	123	120	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A100977

Included Lab Sample IDs: 2195224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	131	93.1	P/P	60 - 160
Endothall	100	106	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100980

Included Lab Sample IDs: 2195220

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100990

Included Lab Sample IDs: 2195221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101044

Included Lab Sample IDs: 2195224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	133	111	P/P	50 - 150
Acetaminophen	112	115	P/P	60 - 160
Acetamiprid	121	117	P/P	50 - 150
Afidopyropen	87.8	93.3	P/P	50 - 150
Bentazon	108	115	P/P	50 - 160
Benzovindiflupyr	110	115	P/P	50 - 150
Carbamazepine	105	106	P/P	60 - 150
Clothianidin	92.4	96.2	P/P	60 - 150
Dinotefuran	95.9	101	P/P	50 - 150
Diuron	104	106	P/P	60 - 160
Fenuron	111	101	P/P	60 - 150
Fluridone	111	111	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A101044
Included Lab Sample IDs: 2195224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	104	107	P/P	60 - 150
Ibuprofen	95.0	101	P/P	50 - 160
Imazapyr	132	107	P/P	50 - 160
Imidacloprid	117	93.9	P/P	60 - 150
Linuron	88.9	85.8	P/P	60 - 150
Mandestrobin	105	103	P/P	50 - 150
MCPP	109	115	P/P	50 - 150
Naproxen	68.2	61.7	P/P	50 - 160
Primidone	109	92.1	P/P	60 - 150
Pyraclostrobin	104	97.7	P/P	60 - 150
Thiamethoxam	102	99.5	P/P	50 - 150
Tolfenpyrad	102	97.3	P/P	60 - 150
Triclopyr	113	122	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101161
Included Lab Sample IDs: 2195221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	85 - 115

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.09	
EPA 300.0 Rev. 2.1	Chloride	94.7	92.0	95.8		0.294	
	Sulfate	94.5	93.4	95.3		0.431	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	96.6	97.1			0.468
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103					1.05
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	95.2				0.198
EPA 365.1 Rev. 2.0	Total-P	107	108	106			2.26
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	97.7	98.9			1.08
EPA 8321B	2,4-D	121					7.92
	Acesulfame K	110	104	103			0.805
	Acetaminophen	94.7	91.7	88.6			3.39
	Acetamiprid	68.6	69.0	64.9			6.08
	Afidopyropen	48.9	48.4	53.5			9.85
	AMPA	60.4	90.9	94.1			3.07
	Bentazon	57.4					3.32
	Benzovindiflupyr	69.4	60.8	61.7			1.46
	Carbamazepine	61.4	55.2	52.0			5.40
	Clothianidin	79.3	64.3	64.1			0.388
	Dinotefuran	91.8	88.0	83.8			4.49
	Diuron	54.6	45.9	42.9			5.74
	Endothall	84.0	70.3	79.6			12.5
	Fenuron	89.8	71.3	70.1			1.58
	Fluridone	77.7					6.46
	Glufosinate	97.6	92.0	97.1			5.47
	Glyphosate	114	120	114			5.22
	Hydrocodone	80.2	74.9	71.8			4.24
	Ibuprofen	73.5	60.0	67.1			11.2
	Imazapyr	94.5					12.4
	Imidacloprid	98.6	128	123			2.83
	Linuron	61.0	55.4	55.4			0.0316
	Mandestrobin	76.9	74.3	72.4			2.61
	MCPP	115	101	107			5.39
	Naproxen	68.3	87.8	82.6			6.15
	Primidone	77.8	76.3	71.9			5.40
	Pyraclostrobin	66.4	59.2	61.6			4.00
	Sucralose	114	95.4	96.9			1.61
	Thiamethoxam	76.6	80.1	80.5			0.361
	Tolfenpyrad	51.8	44.7	51.3			13.5
	Triclopyr	104	96.3	113			15.8
SM 2120 B-2011	Color (true)	98.6				2.83	
SM 2320 B-2011	Total Alkalinity	103				2.53	
SM 2540 C-2011	TDS					1.58	
SM 4500 F-C-2011	Fluoride	98.1	96.3	96.3			0.0
SM 5310 B-2011	Organic Carbon	97.8	97.9	99.3			0.810

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2195220
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2195220
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2195220
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2195221
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2195221

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2195221
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2195221
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2195222
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2195224
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2195224
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2195220
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2195220
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2195220
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2195220
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2195220
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2195221

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	09/10/2020			09/10/2020 15:02	Yen Ta	2195220
EPA 300.0 Rev. 2.1	09/10/2020			09/15/2020 16:40	Lipi Saha	2195220
EPA 350.1 Rev. 2.0	09/10/2020			09/12/2020 16:31	Ping Hua	2195221
EPA 351.2 Rev. 2.0	09/10/2020	09/14/2020 12:35	David Boose	09/15/2020 12:35	Elliott Rodriguez	2195221
EPA 353.2 Rev. 2.0	09/10/2020			09/14/2020 09:24	Beverly Y. Sanders	2195221
EPA 365.1 Rev. 2.0	09/10/2020	09/22/2020 11:37	Yen Ta	09/23/2020 14:39	Benjamin T. Nordmann	2195221
EPA 365.1 Rev. 2.0 dissolved	09/10/2020			09/10/2020 16:08	Virginia P. Brown	2195222
EPA 8321B	09/10/2020	09/10/2020 14:00	Hoor Shaik	09/18/2020 20:22	Juyoung Kim	2195224
	09/10/2020	09/11/2020 14:00	Rebecca Ware	09/11/2020 23:59	Rebecca Ware	2195224
	09/10/2020	09/11/2020 14:00	Rebecca Ware	09/14/2020 12:20	Rebecca Ware	2195224
	09/10/2020	09/11/2020 14:00	Rebecca Ware	09/14/2020 17:43	Rebecca Ware	2195224
SM 2120 B-2011	09/10/2020			09/10/2020 15:48	Benjamin T. Nordmann	2195220
SM 2320 B-2011	09/10/2020			09/11/2020 16:40	Dale L. Simmons	2195220
SM 2540 C-2011	09/10/2020			09/14/2020 15:06	Yijie Li	2195220
SM 2540 D-2011	09/10/2020			09/14/2020 15:06	Yijie Li	2195220
SM 4500 F-C-2011	09/10/2020			09/11/2020 16:40	Dale L. Simmons	2195220
SM 5310 B-2011	09/10/2020			09/11/2020 20:00	David Boose	2195221