

Chemical Analysis Report

TLH-ROC-2020-09-03-01

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

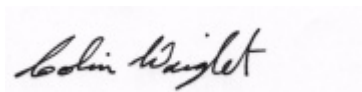
Event Description: **Run 1**
Request ID: **RQ-2020-07-20-35**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Colin Wright, Program Administrator

Date Certified: 23-SEP-2020 14:27

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Bailey Mill Creek @ Wilson Rd

Collection Date/Time: 09/02/2020 10:50

Field ID: G1TLHR0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193993	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P386931	
	EPA 300.0 Rev. 2.1	Chloride	4.4	A	mg Cl/L	P387637	
		Sulfate	0.20	UA	mg SO4/L	P387639	
	SM 2120 B-2011	Color (true)	320		PCU	P386935	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P387119	
	SM 2540 C-2011	TDS	134		mg/L	P387215	
	SM 2540 D-2011	TSS	6	I	mg/L	P387164	
	SM 4500 F-C-2011	Fluoride	0.063	I	mg F/L	P387122	
2193994	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P387035	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P387099	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P387073	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P386974	MS
	SM 5310 B-2011	Organic Carbon	31		mg C/L	P387200	
2193995	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P386946	
2193997	EPA 8321B	2,4-D	0.0020	U	ug/L	P386871	
		Acesulfame K**	0.82		ug/L	P386879	MS
		AMPA**	0.10	U	ug/L	P386879	
		Sucralose**	0.010	U	ug/L	P386879	MS
		Acetaminophen**	0.37		ug/L	P386871	
		Acetamiprid**	0.0020	U	ug/L	P386871	
		Endothall**	0.25	U	ug/L	P386879	
		Glufosinate**	0.10	U	ug/L	P386879	MS
		Glyphosate**	0.10	U	ug/L	P386879	MS
		Afidopyropen**	0.0020	U	ug/L	P386871	
		Bentazon	8.0E-04	U	ug/L	P386871	
		Benzovindiflupyr**	0.0020	U	ug/L	P386871	
		Carbamazepine**	8.0E-04	U	ug/L	P386871	
		Clothianidin**	0.0020	U	ug/L	P386871	
		Dinotefuran**	0.0020	U	ug/L	P386871	
		Diuron	0.0020	U	ug/L	P386871	
		Fenuron	0.016	U	ug/L	P386871	
		Fluridone**	8.0E-04	U	ug/L	P386871	
		Imazapyr**	0.027		ug/L	P386871	
		Hydrocodone**	0.027		ug/L	P386871	
		Ibuprofen**	0.020	U	ug/L	P386871	
		Imidacloprid	0.0020	U	ug/L	P386871	
		Linuron	0.0040	U	ug/L	P386871	
		Mandestrobin**	0.0020	U	ug/L	P386871	
		MCP	0.0020	U	ug/L	P386871	
		Naproxen**	0.0080	U	ug/L	P386871	
		Primidone**	0.0040	U	ug/L	P386871	
		Pyraclostrobin**	0.0020	U	ug/L	P386871	
		Thiamethoxam**	0.0020	U	ug/L	P386871	

Field ID: G1TLHR0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193997	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P386871	
		Triclopyr**	0.0040	U	ug/L	P386871	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for bentazon and imazapyr could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for diuron and fluridone 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: P386931

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387637

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387639

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387035

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387099

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387073

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386974

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386946

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

Reference Method: EPA 8321B
Batch ID: P386871

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: P386871

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: P386879

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: P386935

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P387119

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P387215

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P387164

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387122

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387200

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: P387637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387035

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387073

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386974

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386946

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

Reference Method: EPA 8321B
Batch ID: P386871

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	53.3		P	30 - 160
Acetaminophen	82.4		P	30 - 160
Acetamiprid	76.9		P	30 - 160
Afidopyropen	65.8		P	30 - 160
Bentazon	42.5		P	30 - 160
Benzovindiflupyr	67.0		P	30 - 160
Carbamazepine	69.3		P	30 - 160
Clothianidin	85.6		P	30 - 160
Dinotefuran	81.5		P	30 - 160
Diuron	75.1		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386871

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	90.1		P	30 - 160
Fluridone	97.4		P	30 - 160
Hydrocodone	80.0		P	30 - 160
Ibuprofen	41.5		P	30 - 160
Imazapyr	46.1		P	30 - 160
Imidacloprid	99.2		P	30 - 160
Linuron	71.7		P	30 - 160
Mandestrobin	74.5		P	30 - 160
MCPP	54.0		P	30 - 160
Naproxen	88.2		P	30 - 160
Primidone	80.2		P	30 - 160
Pyraclostrobin	66.4		P	30 - 160
Thiamethoxam	79.3		P	30 - 160
Tolfenpyrad	45.0		P	30 - 160
Triclopyr	48.4		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386879

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	72.7		P	40 - 150
AMPA	84.7		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	104		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P386935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.0		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P387119

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

Reference Method: SM 4500 F-C-2011
Batch ID: P387122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193961	Chloride	96.2		P	90 - 110
2193993	Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193961	Sulfate	95.6		P	90 - 110
2193993	Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194020	Ammonia-N	96.7	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194023	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193994	NO2NO3-N	92.8	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193720	Total-P	109	111	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194021	O-Phosphate-P	100	99.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P386871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193583	2,4-D	40.5	36.0	P/P	30 - 160
2193583	Acetaminophen	82.6	88.2	P/P	30 - 160
2193583	Acetamiprid	71.2	76.4	P/P	30 - 160
2193583	Afidopyrophen	60.6	66.5	P/P	30 - 160
2193583	Benzovindiflupyr	54.6	60.5	P/P	30 - 160
2193583	Carbamazepine	53.7	55.7	P/P	30 - 160
2193583	Clothianidin	68.7	77.9	P/P	30 - 160
2193583	Dinotefuran	83.6	88.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193583	Fenuron	71.2	74.3	P/P	30 - 160
2193583	Hydrocodone	65.3	69.6	P/P	30 - 160
2193583	Ibuprofen	38.6	40.5	P/P	30 - 160
2193583	Imidacloprid	117	131	P/P	30 - 160
2193583	Linuron	61.9	65.0	P/P	30 - 160
2193583	Mandestrobin	65.3	71.0	P/P	30 - 160
2193583	MCP	39.6	39.5	P/P	30 - 160
2193583	Naproxen	47.3	60.1	P/P	30 - 160
2193583	Primidone	76.7	78.9	P/P	30 - 160
2193583	Pyraclostrobin	61.6	62.4	P/P	30 - 160
2193583	Thiamethoxam	79.1	82.2	P/P	30 - 160
2193583	Tolfenpyrad	41.5	45.6	P/P	30 - 160
2193583	Triclopyr	39.4	37.0	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193353	Acesulfame K	29.8	29.0	F/F	40 - 150
2193353	AMPA	48.6	42.7	P/P	40 - 150
2193353	Endothall	90.2	106	P/P	40 - 150
2193353	Glufosinate	182	152	F/F	40 - 150
2193353	Glyphosate	510	446	F/F	40 - 140
2193353	Sucralose	22.1	19.2	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P387122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194066	Fluoride	97.3	97.9	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194023	Organic Carbon	95.1	96.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193961	Turbidity	4.90	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193993	Chloride	0.413	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194020	Ammonia-N	2.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194023	Kjeldahl Nitrogen	3.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193994	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193720	Total-P	1.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194021	O-Phosphate-P	0.601	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P386871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193583	2,4-D	6.46	Spike	P	0 - 30
2193583	Acetaminophen	6.53	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P386871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193583	Acetamiprid	7.04	Spike	P	0 - 30
2193583	Afidopyropen	9.34	Spike	P	0 - 30
2193583	Bentazon	0.726	Spike	P	0 - 30
2193583	Benzovindiflupyr	10.3	Spike	P	0 - 30
2193583	Carbamazepine	3.29	Spike	P	0 - 30
2193583	Clothianidin	12.2	Spike	P	0 - 30
2193583	Dinotefuran	4.99	Spike	P	0 - 30
2193583	Fenuron	4.28	Spike	P	0 - 30
2193583	Hydrocodone	6.36	Spike	P	0 - 30
2193583	Ibuprofen	4.95	Spike	P	0 - 30
2193583	Imazapyr	1.33	Spike	P	0 - 30
2193583	Imidacloprid	8.23	Spike	P	0 - 30
2193583	Linuron	4.87	Spike	P	0 - 30
2193583	Mandestrobin	8.42	Spike	P	0 - 30
2193583	MCPP	0.241	Spike	P	0 - 30
2193583	Naproxen	23.9	Spike	P	0 - 30
2193583	Primidone	2.66	Spike	P	0 - 30
2193583	Pyraclostrobin	1.41	Spike	P	0 - 30
2193583	Thiamethoxam	3.81	Spike	P	0 - 30
2193583	Tolfenpyrad	9.25	Spike	P	0 - 30
2193583	Triclopyr	6.33	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P386879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193353	Acesulfame K	2.76	Spike	P	0 - 30
2193353	AMPA	5.28	Spike	P	0 - 30
2193353	Endothall	16.4	Spike	P	0 - 30
2193353	Glufosinate	17.7	Spike	P	0 - 30
2193353	Glyphosate	6.17	Spike	P	0 - 30
2193353	Sucralose	8.16	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P386935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194019	Color (true)	2.77	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P387119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194066	Total Alkalinity	0.527	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P387215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194055	TDS	0.506	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P387164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194055	TSS	2.44	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P387122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194066	Fluoride	0.462	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P387200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194023	Organic Carbon	1.40	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2193997

Field Sample ID: G1TLHR0081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	56.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	47.4	P	30 - 160
EPA 8321B	Diuron-d6	42.7	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.7	P	30 - 160
EPA 8321B	Primidone-d5	68.6	P	30 - 160
EPA 8321B	Sucralose-d6	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	88.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100810

Included Lab Sample IDs: 2193993

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

Reference Method: SM 2120 B-2011

Run ID: A100812

Included Lab Sample IDs: 2193993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	97.8	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100813

Included Lab Sample IDs: 2193995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100836

Included Lab Sample IDs: 2193994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100845

Included Lab Sample IDs: 2193994

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

Reference Method: SM 2320 B-2011

Run ID: A100870

Included Lab Sample IDs: 2193993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100870

Included Lab Sample IDs: 2193993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100891

Included Lab Sample IDs: 2193994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	91.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A100901
 Included Lab Sample IDs: 2193997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	65.6	62.4	P/P	60 - 160
Endothall	118	122	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A100903
 Included Lab Sample IDs: 2193997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.3	82.6	P/P	60 - 160
Glufosinate	97.2	92.1	P/P	60 - 160
Glyphosate	110	112	P/P	60 - 160

Reference Method: SM 5310 B-2011
 Run ID: A100906
 Included Lab Sample IDs: 2193994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	93.8	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A100936
 Included Lab Sample IDs: 2193997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.9	102	P/P	50 - 150
Acetaminophen	107	94.6	P/P	60 - 160
Acetamiprid	113	112	P/P	50 - 150
Afidopyropen	102	101	P/P	50 - 150
Bentazon	109	126	P/P	50 - 160
Benzovindiflupyr	106	87.7	P/P	50 - 150
Carbamazepine	109	109	P/P	60 - 150
Clothianidin	119	91.6	P/P	60 - 150
Dinotefuran	104	96.1	P/P	50 - 150
Diuron	104	99.1	P/P	60 - 160
Fenuron	116	122	P/P	60 - 150
Fluridone	99.7	103	P/P	60 - 160
Hydrocodone	121	110	P/P	60 - 150
Ibuprofen	80.6	103	P/P	50 - 160
Imazapyr	142	130	P/P	50 - 160
Imidacloprid	98.7	102	P/P	60 - 150
Linuron	116	117	P/P	60 - 150
Mandestrobin	103	104	P/P	50 - 150
MCPP	98.1	110	P/P	50 - 150
Naproxen	64.4	76.4	P/P	50 - 160
Primidone	98.1	111	P/P	60 - 150
Pyraclostrobin	113	107	P/P	60 - 150
Thiamethoxam	112	108	P/P	50 - 150
Tolfenpyrad	137	120	P/P	60 - 150
Triclopyr	102	94.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A100956
Included Lab Sample IDs: 2193997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	106	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A100980
Included Lab Sample IDs: 2193993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	99.7	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101080
Included Lab Sample IDs: 2193994

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

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					4.90	
EPA 300.0 Rev. 2.1	Chloride	93.6	93.7	96.2		0.413	
	Sulfate	93.6	94.2	95.6			
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	96.7	99.1			2.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.4	104	108			3.20
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	92.8	93.2			0.501
EPA 365.1 Rev. 2.0	Total-P	105	109	111			1.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	100	99.6			0.601
EPA 8321B	2,4-D	53.3	40.5	36.0			6.46
	Acesulfame K	72.7	29.8	29.0			2.76
	Acetaminophen	82.4	82.6	88.2			6.53
	Acetamiprid	76.9	71.2	76.4			7.04
	Afidopyropen	65.8	60.6	66.5			9.34
	AMPA	84.7	48.6	42.7			5.28
	Bentazon	42.5					0.726
	Benzovindiflupyr	67.0	54.6	60.5			10.3
	Carbamazepine	69.3	53.7	55.7			3.29
	Clothianidin	85.6	68.7	77.9			12.2
	Dinotefuran	81.5	83.6	88.1			4.99
	Diuron	75.1					
	Endothall	107	90.2	106			16.4
	Fenuron	90.1	71.2	74.3			4.28
	Fluridone	97.4					
	Glufosinate	100	182	152			17.7
	Glyphosate	108	510	446			6.17
	Hydrocodone	80.0	65.3	69.6			6.36
	Ibuprofen	41.5	38.6	40.5			4.95
	Imazapyr	46.1					1.33
	Imidacloprid	99.2	117	131			8.23
	Linuron	71.7	61.9	65.0			4.87
	Mandestrobin	74.5	65.3	71.0			8.42
	MCPP	54.0	39.6	39.5			0.241
	Naproxen	88.2	47.3	60.1			23.9
	Primidone	80.2	76.7	78.9			2.66
	Pyraclostrobin	66.4	61.6	62.4			1.41
	Sucralose	104	22.1	19.2			8.16
	Thiamethoxam	79.3	79.1	82.2			3.81
	Tolfenpyrad	45.0	41.5	45.6			9.25
	Triclopyr	48.4	39.4	37.0			6.33
SM 2120 B-2011	Color (true)	97.0				2.77	
SM 2320 B-2011	Total Alkalinity	101				0.527	
SM 2540 C-2011	TDS					0.506	
SM 2540 D-2011	TSS					2.44	
SM 4500 F-C-2011	Fluoride	98.4	97.3	97.9			0.462
SM 5310 B-2011	Organic Carbon	95.4	95.1	96.8			1.40

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2193993
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2193993
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2193993
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2193994

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2193994
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2193994
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2193994
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2193995
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2193997
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2193997
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2193993
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2193993
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2193993
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2193993
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2193993
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2193994

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	09/03/2020			09/03/2020 14:41	Yen Ta	2193993
EPA 300.0 Rev. 2.1	09/03/2020			09/18/2020 13:44	Lipi Saha	2193993
EPA 350.1 Rev. 2.0	09/03/2020			09/07/2020 14:10	Ping Hua	2193994
EPA 351.2 Rev. 2.0	09/03/2020	09/08/2020 12:50	David Boose	09/09/2020 11:44	Elliott Rodriguez	2193994
EPA 353.2 Rev. 2.0	09/03/2020			09/08/2020 11:06	Beverly Y. Sanders	2193994
EPA 365.1 Rev. 2.0	09/03/2020	09/04/2020 11:45	Yen Ta	09/18/2020 13:22	Benjamin T. Nordmann	2193994
EPA 365.1 Rev. 2.0 dissolved	09/03/2020			09/03/2020 17:19	Virginia P. Brown	2193995
EPA 8321B	09/03/2020	09/03/2020 10:00	Rebecca Ware	09/03/2020 13:34	Rebecca Ware	2193997
	09/03/2020	09/03/2020 10:00	Rebecca Ware	09/04/2020 14:58	Rebecca Ware	2193997
	09/03/2020	09/03/2020 10:00	Rebecca Ware	09/10/2020 14:38	Rebecca Ware	2193997
	09/03/2020	09/03/2020 15:00	Hoor Shaik	09/11/2020 02:03	Juyoung Kim	2193997
SM 2120 B-2011	09/03/2020			09/03/2020 16:14	Benjamin T. Nordmann	2193993
SM 2320 B-2011	09/03/2020			09/04/2020 19:01	Dale L. Simmons	2193993
SM 2540 C-2011	09/03/2020			09/04/2020 16:59	Madeline Gruver	2193993
SM 2540 D-2011	09/03/2020			09/04/2020 19:04	Madeline Gruver	2193993
SM 4500 F-C-2011	09/03/2020			09/04/2020 19:01	Dale L. Simmons	2193993
SM 5310 B-2011	09/03/2020			09/10/2020 03:44	David Boose	2193994