

Chemical Analysis Report

TLH-ROC-2021-10-06-02

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

Event Description: **Waccasassa**
Request ID: **RQ-2021-10-11-58**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 15-OCT-2021 16:26

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Metals 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: Waccasassa River @ Otter Creek

Collection Date/Time: 10/06/2021 14:00

Field ID: G1TLHR0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2281260	EPA 8321B	2,4-D	0.0020	U	ug/L	P404638	MS
		Acesulfame K	0.10	U	ug/L	P404637	
		2,4,5-T	0.0040	U	ug/L	P404638	
		AMPA	0.10	U	ug/L	P404637	
		Acetaminophen	0.0080	U	ug/L	P404638	
		Acetamiprid	0.0020	U	ug/L	P404638	
		Endothall	0.25	U	ug/L	P404637	
		Glufosinate	0.10	U	ug/L	P404637	
		Glyphosate	0.10	U	ug/L	P404637	
		Afidopyropen	0.0020	U	ug/L	P404638	
		Bentazon	8.0E-04	U	ug/L	P404638	
		Sucralose	0.010	U	ug/L	P404637	
		Benzovindiflupyr	0.0020	U	ug/L	P404638	
		Carbamazepine	8.0E-04	U	ug/L	P404638	
		Clothianidin	0.0020	U	ug/L	P404638	
		Dinotefuran	0.0020	U	ug/L	P404638	
		Diuron	0.0020	U	ug/L	P404638	
		Fenuron	0.016	U	ug/L	P404638	
		Fluridone	8.0E-04	U	ug/L	P404638	
		Imazapyr	0.012	I	ug/L	P404638	
		Hydrocodone	0.0020	U	ug/L	P404638	
		Ibuprofen	0.020	U	ug/L	P404638	
		Imidacloprid	0.0020	U	ug/L	P404638	
		Linuron	0.0040	U	ug/L	P404638	
		Mandestrobin	0.0020	U	ug/L	P404638	
		MCPP	0.0027	I	ug/L	P404638	
		Naproxen	0.0080	U	ug/L	P404638	
		Primidone	0.0040	U	ug/L	P404638	
		Pyraclostrobin	0.0020	U	ug/L	P404638	
		Thiamethoxam	0.0020	U	ug/L	P404638	
		Tolfenpyrad	0.0020	U	ug/L	P404638	
		Triclopyr	0.0040	U	ug/L	P404638	
2281262	EPA 200.7 Rev. 4.4	Calcium	69.5		mg/L	P404746	
		Iron	610		ug/L	P404746	
		Magnesium	84.0		mg/L	P404746	
		Manganese	25.9		ug/L	P404746	
		Zinc	5.3	I	ug/L	P404746	
	EPA 200.8 Rev. 5.4	Aluminum	88		ug/L	P404746	
		Antimony	0.055	I	ug/L	P404746	
		Arsenic	0.96		ug/L	P404746	
		Beryllium	0.010	U	ug/L	P404746	
		Cadmium	0.020	U	ug/L	P404746	
		Chromium	0.54	I	ug/L	P404746	
		Copper	0.40	U	ug/L	P404746	

Field ID: G1TLHR0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2281262	EPA 200.8 Rev. 5.4	Lead	0.20	U	ug/L	P404746	
		Nickel	0.50	U	ug/L	P404746	
		Selenium	0.20	U	ug/L	P404746	
		Silver	0.010	U	ug/L	P404746	
		Thallium	0.10	U	ug/L	P404746	

Ref. Method and Comment:
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Waccasassa River @ Boat Ramp

Collection Date/Time: 10/06/2021 13:50

Field ID: G1TLHR0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2281261	EPA 8321B	2,4-D	0.0020	U	ug/L	P404638	MS
		Acesulfame K	0.10	U	ug/L	P404637	
		2,4,5-T	0.0040	U	ug/L	P404638	
		AMPA	0.10	U	ug/L	P404637	
		Acetaminophen	0.0080	U	ug/L	P404638	
		Acetamiprid	0.0020	U	ug/L	P404638	
		Endothall	0.25	U	ug/L	P404637	
		Glufosinate	0.10	U	ug/L	P404637	
		Glyphosate	0.10	U	ug/L	P404637	
		Afidopyropen	0.0020	U	ug/L	P404638	
		Bentazon	8.0E-04	U	ug/L	P404638	
		Sucralose	0.010	U	ug/L	P404637	
		Benzovindiflupyr	0.0020	U	ug/L	P404638	
		Carbamazepine	8.0E-04	U	ug/L	P404638	
		Clothianidin	0.0020	U	ug/L	P404638	
		Dinotefuran	0.0020	U	ug/L	P404638	
		Diuron	0.0020	U	ug/L	P404638	
		Fenuron	0.016	U	ug/L	P404638	
		Fluridone	8.0E-04	U	ug/L	P404638	
		Imazapyr	0.0076	I	ug/L	P404638	
		Hydrocodone	0.0020	U	ug/L	P404638	
		Ibuprofen	0.020	U	ug/L	P404638	
		Imidacloprid	0.0020	U	ug/L	P404638	
		Linuron	0.0040	U	ug/L	P404638	
		Mandestrobin	0.0020	U	ug/L	P404638	
		MCPP	0.0028	I	ug/L	P404638	
		Naproxen	0.0080	U	ug/L	P404638	
		Primidone	0.0040	U	ug/L	P404638	
		Pyraclostrobin	0.0020	U	ug/L	P404638	
		Thiamethoxam	0.0020	U	ug/L	P404638	
		Tolfenpyrad	0.0020	U	ug/L	P404638	
		Triclopyr	0.0040	U	ug/L	P404638	
2281263	EPA 200.7 Rev. 4.4	Calcium	42.4		mg/L	P404746	
		Iron	730		ug/L	P404746	
		Magnesium	10.6		mg/L	P404746	
		Manganese	26.4		ug/L	P404746	
		Zinc	5.0	U	ug/L	P404746	
	EPA 200.8 Rev. 5.4	Aluminum	61		ug/L	P404746	
		Antimony	0.050	U	ug/L	P404746	
		Arsenic	0.63		ug/L	P404746	
		Beryllium	0.010	U	ug/L	P404746	
		Cadmium	0.020	U	ug/L	P404746	
		Chromium	0.49	I	ug/L	P404746	
		Copper	0.40	U	ug/L	P404746	

Field ID: G1TLHR0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2281263	EPA 200.8 Rev. 5.4	Lead	0.20	U	ug/L	P404746	
		Nickel	0.50	U	ug/L	P404746	
		Selenium	0.20	U	ug/L	P404746	
		Silver	0.010	U	ug/L	P404746	
		Thallium	0.10	U	ug/L	P404746	

Ref. Method and Comment:
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404746

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404746

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 8321B

Batch ID: P404637

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: EPA 8321B

Batch ID: P404638

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P404638

Component	Result	Code	Units
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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	99.3		P	85 - 115
Zinc	98.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	85 - 115
Antimony	109		P	85 - 115
Arsenic	104		P	85 - 115
Beryllium	103		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	106		P	85 - 115
Copper	101		P	85 - 115
Lead	102		P	85 - 115
Nickel	101		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 8321B
Batch ID: P404637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	109		P	40 - 150
AMPA	96.8		P	40 - 160
Endothall	69.1		P	40 - 150
Glufosinate	111		P	40 - 160
Glyphosate	79.7		P	40 - 160
Sucralose	125		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
2,4,5-T	116		P	40 - 150
Acetaminophen	78.6		P	30 - 150
Acetamiprid	92.1		P	40 - 150
Afidopyropen	92.5		P	40 - 150
Bentazon	125		P	30 - 150
Benzovindiflupyr	83.7		P	40 - 150
Carbamazepine	103		P	40 - 150
Clothianidin	103		P	40 - 150
Dinotefuran	91.2		P	40 - 150
Diuron	91.1		P	40 - 150
Fenuron	96.6		P	40 - 150
Fluridone	96.3		P	40 - 150
Hydrocodone	90.4		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P404638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ibuprofen	75.2		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	98.2		P	40 - 150
Linuron	83.3		P	40 - 150
Mandestrobin	90.9		P	40 - 150
MCPP	109		P	40 - 150
Naproxen	134		P	40 - 150
Primidone	109		P	40 - 150
Pyraclostrobin	77.0		P	40 - 150
Thiamethoxam	97.0		P	40 - 150
Tolfenpyrad	53.0		P	30 - 150
Triclopyr	121		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2280415	Calcium	99.8		P	80 - 120
2280415	Iron	106	106	P/P	80 - 120
2280415	Magnesium	106	105	P/P	80 - 120
2280415	Manganese	100	99.1	P/P	80 - 120
2280415	Zinc	103	102	P/P	80 - 120
2280756	Calcium	106		P	80 - 120
2280756	Iron	110		P	80 - 120
2280756	Magnesium	108		P	80 - 120
2280756	Manganese	101		P	80 - 120
2280756	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2280415	Aluminum	101	105	P/P	80 - 120
2280415	Antimony	105	109	P/P	80 - 120
2280415	Arsenic	103	106	P/P	80 - 120
2280415	Beryllium	99.3	104	P/P	80 - 120
2280415	Cadmium	100	107	P/P	80 - 120
2280415	Chromium	98.7	103	P/P	80 - 120
2280415	Copper	99.9	104	P/P	80 - 120
2280415	Lead	97.8	102	P/P	80 - 120
2280415	Nickel	97.4	102	P/P	80 - 120
2280415	Selenium	102	104	P/P	80 - 120
2280415	Silver	97.5	101	P/P	80 - 120
2280415	Thallium	103	108	P/P	80 - 120
2280756	Aluminum	103		P	80 - 120
2280756	Antimony	106		P	80 - 120
2280756	Arsenic	100		P	80 - 120
2280756	Beryllium	94.8		P	80 - 120
2280756	Cadmium	104		P	80 - 120
2280756	Chromium	99.2		P	80 - 120
2280756	Copper	97.3		P	80 - 120
2280756	Lead	99.5		P	80 - 120
2280756	Nickel	97.3		P	80 - 120
2280756	Selenium	99.8		P	80 - 120
2280756	Silver	96.8		P	80 - 120
2280756	Thallium	105		P	80 - 120

Reference Method: EPA 8321B

Batch ID: P404637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2281588	Acesulfame K	153	113	F/P	40 - 150
2281588	AMPA	65.5	70.2	P/P	40 - 160
2281588	Endothall	97.4	94.3	P/P	40 - 150
2281588	Glufosinate	72.7	80.8	P/P	40 - 160
2281588	Glyphosate	42.0	44.5	P/P	40 - 160
2281588	Sucralose	118	119	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P404638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2280800	2,4-D	111	127	P/P	40 - 150
2280800	2,4,5-T	109	122	P/P	40 - 150
2280800	Acetaminophen	133	112	P/P	30 - 150
2280800	Acetamiprid	98.2	90.4	P/P	40 - 150
2280800	Afidopyropen	101	104	P/P	40 - 150
2280800	Benzovindiflupyr	84.6	81.3	P/P	40 - 150
2280800	Carbamazepine	110	114	P/P	40 - 150
2280800	Clothianidin	109	106	P/P	40 - 150
2280800	Dinotefuran	111	118	P/P	40 - 150
2280800	Diuron	96.3	100	P/P	40 - 150
2280800	Fenuron	87.6	93.1	P/P	40 - 150
2280800	Fluridone	94.5	90.3	P/P	40 - 150
2280800	Hydrocodone	105	109	P/P	40 - 150
2280800	Ibuprofen	82.5	93.2	P/P	40 - 150
2280800	Imazapyr	141	123	P/P	40 - 150
2280800	Imidacloprid	124	130	P/P	40 - 150
2280800	Linuron	74.6	80.2	P/P	40 - 150
2280800	Mandestrobin	91.5	90.3	P/P	40 - 150
2280800	MCPP	129	131	P/P	40 - 150
2280800	Naproxen	97.4	97.0	P/P	40 - 150
2280800	Primidone	99.4	91.9	P/P	40 - 150
2280800	Pyraclostrobin	76.7	82.4	P/P	40 - 150
2280800	Thiamethoxam	123	136	P/P	40 - 150
2280800	Tolfenpyrad	49.2	53.9	P/P	30 - 150
2280800	Triclopyr	119	124	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2280415	Calcium	0.496	Spike	P	0 - 20
2280415	Iron	0.154	Spike	P	0 - 20
2280415	Magnesium	0.233	Spike	P	0 - 20
2280415	Manganese	0.816	Spike	P	0 - 20
2280415	Zinc	0.656	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2280415	Aluminum	3.96	Spike	P	0 - 20
2280415	Antimony	3.85	Spike	P	0 - 20
2280415	Arsenic	3.01	Spike	P	0 - 20
2280415	Beryllium	4.41	Spike	P	0 - 20
2280415	Cadmium	5.72	Spike	P	0 - 20
2280415	Chromium	4.04	Spike	P	0 - 20
2280415	Copper	4.14	Spike	P	0 - 20
2280415	Lead	4.11	Spike	P	0 - 20
2280415	Nickel	4.36	Spike	P	0 - 20
2280415	Selenium	1.58	Spike	P	0 - 20
2280415	Silver	3.11	Spike	P	0 - 20
2280415	Thallium	4.38	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P404637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2281588	Acesulfame K	28.2	Spike	P	0 - 30
2281588	AMPA	4.95	Spike	P	0 - 30
2281588	Endothall	3.22	Spike	P	0 - 30
2281588	Glufosinate	10.7	Spike	P	0 - 30
2281588	Glyphosate	2.29	Spike	P	0 - 30
2281588	Sucralose	0.910	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P404638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2280800	2,4-D	11.9	Spike	P	0 - 30
2280800	2,4,5-T	11.8	Spike	P	0 - 30
2280800	Acetaminophen	17.0	Spike	P	0 - 30
2280800	Acetamiprid	8.31	Spike	P	0 - 30
2280800	Afidopyropen	2.75	Spike	P	0 - 30
2280800	Bentazon	1.57	Spike	P	0 - 30
2280800	Benzovindiflupyr	3.97	Spike	P	0 - 30
2280800	Carbamazepine	2.82	Spike	P	0 - 30
2280800	Clothianidin	2.93	Spike	P	0 - 30
2280800	Dinotefuran	5.71	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P404638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2280800	Diuron	3.56	Spike	P	0 - 30
2280800	Fenuron	6.07	Spike	P	0 - 30
2280800	Fluridone	3.76	Spike	P	0 - 30
2280800	Hydrocodone	3.23	Spike	P	0 - 30
2280800	Ibuprofen	12.2	Spike	P	0 - 30
2280800	Imazapyr	8.95	Spike	P	0 - 30
2280800	Imidacloprid	4.18	Spike	P	0 - 30
2280800	Linuron	7.22	Spike	P	0 - 30
2280800	Mandestrobin	1.23	Spike	P	0 - 30
2280800	MCPP	1.97	Spike	P	0 - 30
2280800	Naproxen	0.397	Spike	P	0 - 30
2280800	Primidone	7.82	Spike	P	0 - 30
2280800	Pyraclostrobin	7.27	Spike	P	0 - 30
2280800	Thiamethoxam	9.90	Spike	P	0 - 30
2280800	Tolfenpyrad	9.18	Spike	P	0 - 30
2280800	Triclopyr	4.49	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2281260

Field Sample ID: G1TLHR0101

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	114	P	30 - 160
EPA 8321B	Diuron-d6	98.4	P	30 - 160
EPA 8321B	Endothall-d6	85.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	41.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.2	P	30 - 160
EPA 8321B	Primidone-d5	71.6	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Lab Sample ID: 2281261

Field Sample ID: G1TLHR0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.8	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108217

Included Lab Sample IDs: 2281260, 2281261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.8	97.6	P/P	60 - 160
Glufosinate	110	108	P/P	60 - 160
Glyphosate	78.5	82.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108249

Included Lab Sample IDs: 2281260, 2281261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	118	P/P	60 - 160
Endothall	67.2	71.0	P/P	60 - 160
Sucralose	122	117	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108255

Included Lab Sample IDs: 2281260, 2281261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.9	96.1	P/P	50 - 150
2,4,5-T	92.4	93.2	P/P	50 - 150
Acetaminophen	95.4	90.1	P/P	60 - 160
Acetamiprid	92.4	99.3	P/P	50 - 150
Afidopyropen	101	109	P/P	50 - 150
Bentazon	122	113	P/P	50 - 160
Benzovindiflupyr	97.7	112	P/P	50 - 150
Carbamazepine	105	96.6	P/P	60 - 150
Clothianidin	88.5	101	P/P	60 - 150
Dinotefuran	105	105	P/P	50 - 150
Diuron	123	120	P/P	60 - 160
Fenuron	98.2	98.5	P/P	60 - 150
Fluridone	94.4	96.6	P/P	60 - 160
Hydrocodone	96.3	110	P/P	60 - 150
Ibuprofen	102	111	P/P	50 - 160
Imazapyr	91.9	107	P/P	50 - 150
Imidacloprid	90.3	120	P/P	60 - 150
Linuron	118	96.4	P/P	60 - 150
Mandestrobin	94.5	97.5	P/P	50 - 150
MCPP	97.9	94.4	P/P	50 - 150
Naproxen	149	76.7	P/P	50 - 160
Primidone	95.1	117	P/P	60 - 150
Pyraclostrobin	96.4	96.3	P/P	60 - 150
Thiamethoxam	105	103	P/P	50 - 150
Tolfenpyrad	102	93.4	P/P	60 - 150
Triclopyr	87.1	95.6	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108269

Included Lab Sample IDs: 2281262, 2281263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108269

Included Lab Sample IDs: 2281262, 2281263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	107	107	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	99.5	101	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	97.5	97.7	P/P	90 - 110
Lead	96.7	97.2	P/P	90 - 110
Nickel	96.9	97.8	P/P	90 - 110
Selenium	103	103	P/P	90 - 110
Silver	97.9	98.2	P/P	90 - 110
Thallium	102	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108274

Included Lab Sample IDs: 2281262, 2281263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	105	104	P/P	90 - 110
Manganese	100	101	P/P	90 - 110
Zinc	99.9	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	102	99.8	106			0.496
	Iron	105	106	106	110		0.154
	Magnesium	105	106	105	108		0.233
	Manganese	99.3	100	99.1	101		0.816
	Zinc	98.1	103	102	104		0.656
EPA 200.8 Rev. 5.4	Aluminum	105	101	105	103		3.96
	Antimony	109	105	109	106		3.85
	Arsenic	104	103	106	100		3.01
	Beryllium	103	99.3	104	94.8		4.41
	Cadmium	105	100	107	104		5.72
	Chromium	106	98.7	103	99.2		4.04
	Copper	101	99.9	104	97.3		4.14
	Lead	102	97.8	102	99.5		4.11
	Nickel	101	97.4	102	97.3		4.36
	Selenium	103	102	104	99.8		1.58
	Silver	101	97.5	101	96.8		3.11
	Thallium	106	103	108	105		4.38
	2,4-D	113	111	127			11.9
	2,4,5-T	116	109	122			11.8
	Acesulfame K	109	153	113			28.2
EPA 8321B	Acetaminophen	78.6	133	112			17.0
	Acetamiprid	92.1	98.2	90.4			8.31
	Afidopyropen	92.5	101	104			2.75
	AMPA	96.8	65.5	70.2			4.95
	Bentazon	125					1.57
	Benzovindiflupyr	83.7	84.6	81.3			3.97
	Carbamazepine	103	110	114			2.82
	Clothianidin	103	109	106			2.93
	Dinotefuran	91.2	111	118			5.71
	Diuron	91.1	96.3	100			3.56
	Endothall	69.1	97.4	94.3			3.22
	Fenuron	96.6	87.6	93.1			6.07
	Fluridone	96.3	94.5	90.3			3.76
	Glufosinate	111	72.7	80.8			10.7
	Glyphosate	79.7	42.0	44.5			2.29
	Hydrocodone	90.4	105	109			3.23
	Ibuprofen	75.2	82.5	93.2			12.2
	Imazapyr	103	141	123			8.95
	Imidacloprid	98.2	124	130			4.18
	Linuron	83.3	74.6	80.2			7.22
	Mandestrobin	90.9	91.5	90.3			1.23
	MCPP	109	129	131			1.97
	Naproxen	134	97.4	97.0			0.397
	Primidone	109	99.4	91.9			7.82
	Pyraclostrobin	77.0	76.7	82.4			7.27
	Sucralose	125	118	119			0.910
	Thiamethoxam	97.0	123	136			9.90
	Tolfenpyrad	53.0	49.2	53.9			9.18
	Triclopyr	121	119	124			4.49

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2281262, 2281263
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2281262, 2281263
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2281260, 2281261

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	10/06/2021	10/08/2021 10:00	Emily M Philpot	10/11/2021 16:58	Josef B Mick	2281262
	10/06/2021	10/08/2021 10:00	Emily M Philpot	10/11/2021 17:14	Josef B Mick	2281263
EPA 200.8 Rev. 5.4	10/06/2021	10/08/2021 10:00	Emily M Philpot	10/11/2021 22:12	Alexander Thompson	2281262
	10/06/2021	10/08/2021 10:00	Emily M Philpot	10/11/2021 22:22	Alexander Thompson	2281263
EPA 8321B	10/06/2021	10/07/2021 12:00	Juyoung Kim	10/07/2021 16:45	Juyoung Kim	2281260
	10/06/2021	10/07/2021 12:00	Juyoung Kim	10/07/2021 16:56	Juyoung Kim	2281261
	10/06/2021	10/07/2021 12:00	Juyoung Kim	10/09/2021 00:32	Manjita Shrestha	2281260
	10/06/2021	10/07/2021 12:00	Juyoung Kim	10/09/2021 00:47	Manjita Shrestha	2281261
	10/06/2021	10/07/2021 13:00	Hoor Shaik	10/10/2021 15:44	Juyoung Kim	2281260
	10/06/2021	10/07/2021 13:00	Hoor Shaik	10/10/2021 16:19	Juyoung Kim	2281261