

Chemical Analysis Report

NE-DIST-2019-03-12-01

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

Event Description: **Alachua County March SMP**
Request ID: **RQ-2019-03-11-13**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 28-MAR-2019 15:11



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: DOWNSTREAM OF US441

Collection Date/Time: 03/11/2019 13:15

Field ID: TUM 441

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068775	EPA 8321B	2,4-D	0.55		ug/L	P360131	
		Acesulfame K**	0.18	IJ	ug/L	P360251	MS
		AMPA**	0.24	I	ug/L	P360251	
		Sucralose**	0.53		ug/L	P360251	
		Endothall**	0.25	U	ug/L	P360251	
		Acetaminophen**	0.0080	U	ug/L	P360131	
		Glufosinate**	0.10	U	ug/L	P360251	
		Glyphosate**	0.48		ug/L	P360251	
		Bentazon	0.0014	I	ug/L	P360131	
		Carbamazepine**	8.0E-04	U	ug/L	P360131	
		Diuron	0.0040	I	ug/L	P360131	
		Fenuron	0.016	U	ug/L	P360131	
		Fluridone**	8.0E-04	U	ug/L	P360131	
		Imazapyr**	0.0078	I	ug/L	P360131	
		Hydrocodone**	0.0020	U	ug/L	P360131	
		Ibuprofen**	0.020	U	ug/L	P360131	
		Imidacloprid	0.048		ug/L	P360131	MS
		Linuron	0.0040	U	ug/L	P360131	
		MCP	0.0020	U	ug/L	P360131	MS
		Naproxen**	0.0080	U	ug/L	P360131	
		Primidone**	0.0040	U	ug/L	P360131	
		Pyraclostrobin**	0.0020	U	ug/L	P360131	
		Triclopyr**	0.0040	U	ug/L	P360131	
2068777	EPA 200.7 Rev. 4.4	Barium	19.2		ug/L	P360395	
		Calcium	53.5		mg/L	P360395	
		Iron	120	I	ug/L	P360395	
		Magnesium	7.52		mg/L	P360395	
		Potassium	3.0		mg/L	P360395	
		Sodium	13.5		mg/L	P360395	
		Zinc	5.0	U	ug/L	P360395	
	EPA 200.8 Rev. 5.4	Aluminum	40		ug/L	P360395	
		Antimony	0.28		ug/L	P360395	
		Arsenic	0.77		ug/L	P360395	
		Boron**	50.3		ug/L	P360395	
		Cadmium	0.020	U	ug/L	P360395	
		Chromium	0.40	U	ug/L	P360395	
		Copper	1.04		ug/L	P360395	
		Lead	0.20	U	ug/L	P360395	
		Nickel	0.50	U	ug/L	P360395	
		Selenium	0.29	I	ug/L	P360395	
		Silver	0.010	U	ug/L	P360395	
		Thallium	0.12	I	ug/L	P360395	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: DOWNSTREAM OF SW5TH

Collection Date/Time: 03/11/2019 14:00

Field ID: TUM SW5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068776	EPA 8321B	2,4-D	1.0		ug/L	P360131	
		Acesulfame K**	0.37	I	ug/L	P360251	MS
		AMPA**	0.10	U	ug/L	P360251	
		Sucralose**	0.76		ug/L	P360251	
		Acetaminophen**	0.0092	I	ug/L	P360131	
		Endothall**	0.25	U	ug/L	P360251	
		Glufosinate**	0.10	U	ug/L	P360251	
		Bentazon	0.0033		ug/L	P360131	
		Glyphosate**	0.10	U	ug/L	P360251	
		Carbamazepine**	8.0E-04	U	ug/L	P360131	
		Diuron	0.0031	I	ug/L	P360131	
		Fenuron	0.016	U	ug/L	P360131	
		Fluridone**	8.0E-04	U	ug/L	P360131	
		Imazapyr**	0.0040	U	ug/L	P360131	
		Hydrocodone**	0.0020	U	ug/L	P360131	
		Ibuprofen**	0.020	U	ug/L	P360131	
		Imidacloprid	0.042		ug/L	P360131	MS
		Linuron	0.0040	U	ug/L	P360131	
		MCPP	0.0020	U	ug/L	P360131	MS
		Naproxen**	0.0080	U	ug/L	P360131	
		Primidone**	0.0040	U	ug/L	P360131	
		Pyraclostrobin**	0.0020	U	ug/L	P360131	
		Triclopyr**	0.0040	U	ug/L	P360131	
2068778	EPA 200.7 Rev. 4.4	Barium	27.7		ug/L	P360395	
		Calcium	57.2		mg/L	P360395	
		Iron	530		ug/L	P360395	
		Magnesium	8.81		mg/L	P360395	
		Potassium	3.3		mg/L	P360395	
		Sodium	16.2		mg/L	P360395	
		Zinc	12	I	ug/L	P360395	
	EPA 200.8 Rev. 5.4	Aluminum	390		ug/L	P360395	
		Antimony	0.30		ug/L	P360395	
		Arsenic	0.74		ug/L	P360395	
		Boron**	57.1		ug/L	P360395	
		Cadmium	0.031	I	ug/L	P360395	
		Chromium	0.91	I	ug/L	P360395	
		Copper	1.71		ug/L	P360395	
		Lead	2.16		ug/L	P360395	
		Nickel	0.54	I	ug/L	P360395	
		Selenium	0.49	I	ug/L	P360395	
		Silver	0.010	U	ug/L	P360395	
		Thallium	0.10	U	ug/L	P360395	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	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: P360131

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P360251

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P360251

Component	Result	Code	Units
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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	98.8		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	99.8		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	107		P	85 - 115
Boron	102		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	105		P	85 - 115
Copper	103		P	85 - 115
Lead	103		P	85 - 115
Nickel	103		P	85 - 115
Selenium	105		P	85 - 115
Silver	100		P	85 - 115
Thallium	98.3		P	85 - 115

Reference Method: EPA 8321B
Batch ID: P360131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.9		P	40 - 150
Acetaminophen	80.2		P	30 - 150
Bentazon	91.3		P	30 - 150
Carbamazepine	96.3		P	40 - 150
Diuron	72.2		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	115		P	40 - 150
Hydrocodone	119		P	40 - 150
Ibuprofen	82.7		P	40 - 150
Imazapyr	111		P	40 - 150
Imidacloprid	107		P	40 - 150
Linuron	77.4		P	40 - 150
MCPP	126		P	40 - 150
Naproxen	66.3		P	40 - 150
Primidone	111		P	40 - 150
Pyraclostrobin	67.2		P	40 - 150
Triclopyr	65.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.7		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	92.5		P	40 - 150
Endothall	74.4		P	40 - 150
Glufosinate	123		P	40 - 150
Glyphosate	115		P	40 - 140
Sucralose	74.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068882	Barium	104		P	80 - 120
2068882	Calcium	101		P	80 - 120
2068882	Iron	107		P	80 - 120
2068882	Magnesium	102		P	80 - 120
2068882	Potassium	99.5		P	80 - 120
2068882	Sodium	98.5		P	80 - 120
2068882	Zinc	104		P	80 - 120
2069070	Barium	103	101	P/P	80 - 120
2069070	Calcium	102		P	80 - 120
2069070	Iron	104	104	P/P	80 - 120
2069070	Magnesium	107	106	P/P	80 - 120
2069070	Potassium	98.3	96.9	P/P	80 - 120
2069070	Sodium	102	98.7	P/P	80 - 120
2069070	Zinc	105	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068882	Aluminum	101		P	80 - 120
2068882	Antimony	105		P	80 - 120
2068882	Arsenic	109		P	80 - 120
2068882	Boron	102		P	80 - 120
2068882	Cadmium	107		P	80 - 120
2068882	Chromium	102		P	80 - 120
2068882	Copper	100		P	80 - 120
2068882	Lead	103		P	80 - 120
2068882	Nickel	101		P	80 - 120
2068882	Selenium	105		P	80 - 120
2068882	Silver	100		P	80 - 120
2068882	Thallium	101		P	80 - 120
2069070	Aluminum	101	101	P/P	80 - 120
2069070	Antimony	103	103	P/P	80 - 120
2069070	Arsenic	108	107	P/P	80 - 120
2069070	Boron	106	101	P/P	80 - 120
2069070	Cadmium	105	105	P/P	80 - 120
2069070	Chromium	103	103	P/P	80 - 120
2069070	Copper	101	100	P/P	80 - 120
2069070	Lead	101	101	P/P	80 - 120
2069070	Nickel	101	101	P/P	80 - 120
2069070	Selenium	104	103	P/P	80 - 120
2069070	Silver	100	100	P/P	80 - 120
2069070	Thallium	97.6	99.6	P/P	80 - 120

Reference Method: EPA 8321B
Batch ID: P360131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069006	2,4-D	119	92.7	P/P	40 - 150
2069006	Acetaminophen	118	116	P/P	30 - 150
2069006	Bentazon	77.2	61.1	P/P	30 - 150
2069006	Carbamazepine	87.2	74.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069006	Diuron	62.3	58.5	P/P	40 - 150
2069006	Fenuron	123	118	P/P	40 - 150
2069006	Fluridone	124	111	P/P	40 - 150
2069006	Hydrocodone	117	118	P/P	40 - 150
2069006	Ibuprofen	78.8	69.2	P/P	40 - 150
2069006	Imazapyr	138	114	P/P	40 - 150
2069006	Imidacloprid	197	183	F/F	40 - 150
2069006	Linuron	72.6	73.4	P/P	40 - 150
2069006	MCP	162	142	F/P	40 - 150
2069006	Naproxen	85.7	74.9	P/P	40 - 150
2069006	Primidone	125	104	P/P	40 - 150
2069006	Pyraclostrobin	77.3	65.8	P/P	40 - 150
2069006	Triclopyr	88.4	72.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068775	Acesulfame K	158	178	F/F	40 - 150
2068775	AMPA	71.7	74.4	P/P	40 - 150
2068775	Endothall	76.9	76.7	P/P	40 - 150
2068775	Glufosinate	83.4	100	P/P	40 - 150
2068775	Glyphosate	104	106	P/P	40 - 140
2068775	Sucralose	101	101	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069070	Barium	1.98	Spike	P	0 - 20
2069070	Calcium	0.247	Spike	P	0 - 20
2069070	Iron	0.156	Spike	P	0 - 20
2069070	Magnesium	0.780	Spike	P	0 - 20
2069070	Potassium	1.26	Spike	P	0 - 20
2069070	Sodium	1.98	Spike	P	0 - 20
2069070	Zinc	2.62	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069070	Aluminum	0.260	Spike	P	0 - 20
2069070	Antimony	0.174	Spike	P	0 - 20
2069070	Arsenic	0.365	Spike	P	0 - 20
2069070	Boron	4.92	Spike	P	0 - 20
2069070	Cadmium	0.0979	Spike	P	0 - 20
2069070	Chromium	0.535	Spike	P	0 - 20
2069070	Copper	0.356	Spike	P	0 - 20
2069070	Lead	0.134	Spike	P	0 - 20
2069070	Nickel	0.166	Spike	P	0 - 20
2069070	Selenium	0.437	Spike	P	0 - 20
2069070	Silver	0.401	Spike	P	0 - 20
2069070	Thallium	2.06	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069006	2,4-D	23.0	Spike	P	0 - 30
2069006	Acetaminophen	1.77	Spike	P	0 - 30
2069006	Bentazon	9.24	Spike	P	0 - 30
2069006	Carbamazepine	15.9	Spike	P	0 - 30
2069006	Diuron	3.15	Spike	P	0 - 30
2069006	Fenuron	4.26	Spike	P	0 - 30
2069006	Fluridone	6.68	Spike	P	0 - 30
2069006	Hydrocodone	1.12	Spike	P	0 - 30
2069006	Ibuprofen	13.0	Spike	P	0 - 30
2069006	Imazapyr	9.49	Spike	P	0 - 30
2069006	Imidacloprid	6.77	Spike	P	0 - 30
2069006	Linuron	1.17	Spike	P	0 - 30
2069006	MCP	12.8	Spike	P	0 - 30
2069006	Naproxen	13.5	Spike	P	0 - 30
2069006	Primidone	18.2	Spike	P	0 - 30
2069006	Pyraclostrobin	15.3	Spike	P	0 - 30
2069006	Triclopyr	19.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068775	Acesulfame K	11.3	Spike	P	0 - 30
2068775	AMPA	2.75	Spike	P	0 - 30
2068775	Endothall	0.330	Spike	P	0 - 30
2068775	Glufosinate	18.2	Spike	P	0 - 30
2068775	Glyphosate	1.20	Spike	P	0 - 30
2068775	Sucralose	0.443	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2068775

Field Sample ID: TUM 441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	81.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.5	P	30 - 160
EPA 8321B	Diuron-d6	70.9	P	30 - 160
EPA 8321B	Endothall-d6	72.5	P	30 - 160
EPA 8321B	Endothall-d6	72.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.8	P	30 - 160
EPA 8321B	Primidone-d5	96.1	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Lab Sample ID: 2068776

Field Sample ID: TUM SW5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.7	P	30 - 160
EPA 8321B	Diuron-d6	68.1	P	30 - 160
EPA 8321B	Endothall-d6	67.9	P	30 - 160
EPA 8321B	Endothall-d6	67.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.8	P	30 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89982

Included Lab Sample IDs: 2068775, 2068776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	73.9	84.8	P/P	60 - 160
Endothall	84.7	81.0	P/P	60 - 160
Sucralose	79.2	88.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89984

Included Lab Sample IDs: 2068775, 2068776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.9	105	P/P	60 - 160
Glufosinate	128	128	P/P	60 - 160
Glyphosate	117	111	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90019

Included Lab Sample IDs: 2068777, 2068778

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.5	101	P/P	90 - 110
Calcium	98.7	102	P/P	90 - 110
Iron	101	104	P/P	90 - 110
Magnesium	99.9	103	P/P	90 - 110
Potassium	98.4	99.8	P/P	90 - 110
Sodium	99.3	101	P/P	90 - 110
Zinc	99.1	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90074

Included Lab Sample IDs: 2068777, 2068778

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	100	P/P	90 - 110
Antimony	96.1	97.2	P/P	90 - 110
Arsenic	99.4	100	P/P	90 - 110
Boron	97.6	97.1	P/P	90 - 110
Cadmium	97.3	97.5	P/P	90 - 110
Chromium	99.4	98.8	P/P	90 - 110
Copper	98.8	99.7	P/P	90 - 110
Lead	98.5	99.5	P/P	90 - 110
Nickel	98.4	98.7	P/P	90 - 110
Selenium	98.9	98.9	P/P	90 - 110
Silver	94.3	95.0	P/P	90 - 110
Thallium	90.9	92.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90091

Included Lab Sample IDs: 2068775, 2068776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.6	93.3	P/P	50 - 150
Acetaminophen	102	113	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90091

Included Lab Sample IDs: 2068775, 2068776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	108	102	P/P	60 - 160
Bentazon	94.0	95.7	P/P	50 - 160
Bentazon	95.7	90.1	P/P	50 - 160
Carbamazepine	108	101	P/P	60 - 150
Carbamazepine	109	108	P/P	60 - 150
Diuron	110	110	P/P	60 - 150
Diuron	110	90.2	P/P	60 - 150
Fenuron	110	112	P/P	60 - 150
Fenuron	112	106	P/P	60 - 150
Fluridone	111	115	P/P	60 - 160
Fluridone	115	112	P/P	60 - 160
Hydrocodone	114	116	P/P	60 - 150
Hydrocodone	116	104	P/P	60 - 150
Ibuprofen	80.0	90.1	P/P	50 - 160
Ibuprofen	91.4	80.0	P/P	50 - 160
Imazapyr	88.4	90.4	P/P	50 - 150
Imazapyr	90.8	88.4	P/P	50 - 150
Imidacloprid	100	109	P/P	60 - 150
Imidacloprid	109	89.9	P/P	60 - 150
Linuron	105	87.6	P/P	60 - 150
Linuron	87.6	99.3	P/P	60 - 150
MCPP	92.4	81.8	P/P	50 - 150
MCPP	97.8	92.4	P/P	50 - 150
Naproxen	81.2	97.7	P/P	50 - 160
Naproxen	97.7	91.9	P/P	50 - 160
Primidone	103	80.3	P/P	60 - 150
Primidone	80.3	88.9	P/P	60 - 150
Pyraclostrobin	101	95.9	P/P	60 - 150
Pyraclostrobin	95.9	69.9	P/P	60 - 150
Triclopyr	110	98.7	P/P	50 - 150
Triclopyr	98.7	96.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2068776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	116	75.5	P/P	50 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Barium	104	104	103	101		1.98
	Calcium	98.8	101	102			0.247
	Iron	105	107	104	104		0.156
	Magnesium	107	102	107	106		0.780
	Potassium	99.8	99.5	98.3	96.9		1.26
	Sodium	103	98.5	102	98.7		1.98
	Zinc	102	104	105	102		2.62
EPA 200.8 Rev. 5.4	Aluminum	104	101	101	101		0.260
	Antimony	102	105	103	103		0.174
	Arsenic	107	109	108	107		0.365
	Boron	102	102	106	101		4.92
	Cadmium	104	107	105	105		0.0979
	Chromium	105	102	103	103		0.535
	Copper	103	100	101	100		0.356
	Lead	103	103	101	101		0.134
	Nickel	103	101	101	101		0.166
	Selenium	105	105	104	103		0.437
	Silver	100	100	100	100		0.401
	Thallium	98.3	101	97.6	99.6		2.06
	2,4-D	97.9	119	92.7			23.0
	Acesulfame K	81.7	158	178			11.3
	Acetaminophen	80.2	118	116			1.77
EPA 8321B	AMPA	92.5	71.7	74.4			2.75
	Bentazon	91.3	77.2	61.1			9.24
	Carbamazepine	96.3	87.2	74.3			15.9
	Diuron	72.2	62.3	58.5			3.15
	Endothall	74.4	76.9	76.7			0.330
	Fenuron	129	123	118			4.26
	Fluridone	115	124	111			6.68
	Glufosinate	123	83.4	100			18.2
	Glyphosate	115	104	106			1.20
	Hydrocodone	119	117	118			1.12
	Ibuprofen	82.7	78.8	69.2			13.0
	Imazapyr	111	138	114			9.49
	Imidacloprid	107	197	183			6.77
	Linuron	77.4	72.6	73.4			1.17
	MCPP	126	162	142			12.8
	Naproxen	66.3	85.7	74.9			13.5
	Primidone	111	125	104			18.2
	Pyraclostrobin	67.2	77.3	65.8			15.3
	Sucralose	74.0	101	101			0.443
	Triclopyr	65.1	88.4	72.6			19.7

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2068777, 2068778
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2068777, 2068778
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2068775, 2068776
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2068775, 2068776

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	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/14/2019 14:41	Betina Topolski	2068777
	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/14/2019 14:49	Betina Topolski	2068778
EPA 200.8 Rev. 5.4	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/16/2019 09:09	Allison Taylor	2068777
	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/16/2019 09:18	Allison Taylor	2068778
EPA 8321B	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/12/2019 17:15	Juyoung Kim	2068775
	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/12/2019 17:26	Juyoung Kim	2068776
	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/13/2019 01:17	Juyoung Kim	2068775
	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/13/2019 01:31	Juyoung Kim	2068776
	03/12/2019	03/13/2019 10:00	Hoor Shaik	03/16/2019 06:17	Juyoung Kim	2068775
	03/12/2019	03/13/2019 10:00	Hoor Shaik	03/16/2019 07:26	Juyoung Kim	2068776
	03/12/2019	03/13/2019 10:00	Hoor Shaik	03/25/2019 22:28	Juyoung Kim	2068776