

Chemical Analysis Report

NE-DIST-2019-03-19-01

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 18:50



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: Pareners Branch Creek E of CR1491

Collection Date/Time: 03/18/2019 11:00

Field ID: G1NE0906 - PAR1491

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070985	EPA 8321B	2,4-D	0.0020	U	ug/L	P360626	
		Acesulfame K**	0.10	U	ug/L	P360627	MS
		AMPA**	0.14	I	ug/L	P360627	
		Acetaminophen**	0.018	I	ug/L	P360626	
		Endothall**	0.25	U	ug/L	P360627	MS
		Glufosinate**	0.10	U	ug/L	P360627	
		Bentazon	8.0E-04	U	ug/L	P360626	
		Glyphosate**	0.10	U	ug/L	P360627	
		Carbamazepine**	8.0E-04	U	ug/L	P360626	
		Sucralose**	0.020	I	ug/L	P360627	
		Diuron	0.085		ug/L	P360626	
		Fenuron	0.038	I	ug/L	P360626	
		Fluridone**	0.0019	I	ug/L	P360626	
		Imazapyr**	0.0053	I	ug/L	P360626	
		Hydrocodone**	0.0020	U	ug/L	P360626	
		Ibuprofen**	0.020	U	ug/L	P360626	
		Imidacloprid	0.0054	I	ug/L	P360626	
		Linuron	0.0040	U	ug/L	P360626	
		MCPP	0.0020	U	ug/L	P360626	
		Naproxen**	0.0080	U	ug/L	P360626	
		Primidone**	0.0040	U	ug/L	P360626	
		Pyraclostrobin**	0.0020	U	ug/L	P360626	
		Triclopyr**	0.0040	U	ug/L	P360626	
2070988	EPA 200.7 Rev. 4.4	Barium	5.5		ug/L	P360788	
		Calcium	18.8		mg/L	P360788	
		Iron	350		ug/L	P360788	
		Magnesium	6.44		mg/L	P360788	
		Potassium	1.5		mg/L	P360788	
		Sodium	7.0		mg/L	P360788	
		Zinc	5.0	U	ug/L	P360788	
	EPA 200.8 Rev. 5.4	Aluminum	258		ug/L	P360788	
		Antimony	0.086	I	ug/L	P360788	
		Arsenic	0.59		ug/L	P360788	
		Boron**	19.1		ug/L	P360788	
		Cadmium	0.078	I	ug/L	P360788	
		Chromium	0.87	I	ug/L	P360788	
		Copper	0.46	I	ug/L	P360788	
		Lead	0.21	I	ug/L	P360788	
		Nickel	0.54	I	ug/L	P360788	
		Selenium	0.31	I	ug/L	P360788	
		Silver	0.010	U	ug/L	P360788	
		Thallium	0.10	U	ug/L	P360788	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Pareners Branch Creek DS of CR262

Collection Date/Time: 03/18/2019 11:45

Field ID: G1NE0917 - PAR262

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070986	EPA 8321B	2,4-D	0.0020	U	ug/L	P360626	
		Acesulfame K**	0.10	U	ug/L	P360627	MS
		AMPA**	0.13	I	ug/L	P360627	
		Acetaminophen**	0.0080	U	ug/L	P360626	
		Endothall**	0.25	U	ug/L	P360627	MS
		Glufosinate**	0.10	U	ug/L	P360627	
		Bentazon	8.0E-04	U	ug/L	P360626	
		Glyphosate**	0.10	U	ug/L	P360627	
		Carbamazepine**	8.0E-04	U	ug/L	P360626	
		Sucralose**	0.020	I	ug/L	P360627	
		Diuron	0.021		ug/L	P360626	
		Fenuron	0.016	U	ug/L	P360626	
		Fluridone**	8.0E-04	U	ug/L	P360626	
		Imazapyr**	0.0048	I	ug/L	P360626	
		Hydrocodone**	0.0020	U	ug/L	P360626	
		Ibuprofen**	0.020	U	ug/L	P360626	
		Imidacloprid	0.0066	I	ug/L	P360626	
		Linuron	0.0040	U	ug/L	P360626	
		MCPP	0.0020	U	ug/L	P360626	
		Naproxen**	0.0080	U	ug/L	P360626	
		Primidone**	0.0040	U	ug/L	P360626	
		Pyraclostrobin**	0.0020	U	ug/L	P360626	
		Triclopyr**	0.0040	U	ug/L	P360626	
2070989	EPA 200.7 Rev. 4.4	Barium	5.9		ug/L	P360788	
		Calcium	19.2		mg/L	P360788	
		Iron	400		ug/L	P360788	
		Magnesium	6.69		mg/L	P360788	
		Potassium	1.3		mg/L	P360788	
		Sodium	7.5		mg/L	P360788	
		Zinc	5.0	U	ug/L	P360788	
	EPA 200.8 Rev. 5.4	Aluminum	216		ug/L	P360788	
		Antimony	0.081	I	ug/L	P360788	
		Arsenic	0.57		ug/L	P360788	
		Boron**	18.8		ug/L	P360788	
		Cadmium	0.122		ug/L	P360788	
		Chromium	0.76	I	ug/L	P360788	
		Copper	0.40	U	ug/L	P360788	
		Lead	0.20	U	ug/L	P360788	
		Nickel	0.64	I	ug/L	P360788	
		Selenium	0.20	U	ug/L	P360788	
		Silver	0.010	U	ug/L	P360788	
		Thallium	0.10	U	ug/L	P360788	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Mill Creek E of Old Belamy Rd

Collection Date/Time: 03/18/2019 12:15

Field ID: G1NE0907 - MillBel

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070987	EPA 8321B	2,4-D	0.0020	U	ug/L	P360626	
		Acesulfame K**	0.10	U	ug/L	P360627	MS
		AMPA**	0.10	U	ug/L	P360627	
		Acetaminophen**	0.0080	U	ug/L	P360626	
		Endothall**	0.25	U	ug/L	P360627	MS
		Glufosinate**	0.10	U	ug/L	P360627	
		Bentazon	8.0E-04	U	ug/L	P360626	
		Glyphosate**	0.10	U	ug/L	P360627	
		Carbamazepine**	8.0E-04	U	ug/L	P360626	
		Sucralose**	0.010	U	ug/L	P360627	
		Diuron	0.015		ug/L	P360626	
		Fenuron	0.018	I	ug/L	P360626	
		Fluridone**	8.0E-04	U	ug/L	P360626	
		Imazapyr**	0.0091	I	ug/L	P360626	
		Hydrocodone**	0.0020	U	ug/L	P360626	
		Ibuprofen**	0.020	U	ug/L	P360626	
		Imidacloprid	0.0020	U	ug/L	P360626	
		Linuron	0.0040	U	ug/L	P360626	
		MCPP	0.0020	U	ug/L	P360626	
		Naproxen**	0.0080	U	ug/L	P360626	
		Primidone**	0.0040	U	ug/L	P360626	
		Pyraclostrobin**	0.0020	U	ug/L	P360626	
		Triclopyr**	0.0040	U	ug/L	P360626	
2070990	EPA 200.7 Rev. 4.4	Barium	2.9	I	ug/L	P360788	
		Calcium	9.04		mg/L	P360788	
		Iron	340		ug/L	P360788	
		Magnesium	3.29		mg/L	P360788	
		Potassium	1.2		mg/L	P360788	
		Sodium	5.3		mg/L	P360788	
		Zinc	5.0	U	ug/L	P360788	
	EPA 200.8 Rev. 5.4	Aluminum	228		ug/L	P360788	
		Antimony	0.050	U	ug/L	P360788	
		Arsenic	0.43		ug/L	P360788	
		Boron**	18.2		ug/L	P360788	
		Cadmium	0.028	I	ug/L	P360788	
		Chromium	1.4	I	ug/L	P360788	
		Copper	0.40	U	ug/L	P360788	
		Lead	0.20	U	ug/L	P360788	
		Nickel	0.50	U	ug/L	P360788	
		Selenium	0.20	U	ug/L	P360788	
		Silver	0.010	U	ug/L	P360788	
		Thallium	0.10	U	ug/L	P360788	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imidacloprid 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: P360788

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: P360788

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: P360626

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: P360627

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P360627

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: P360788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.6		P	85 - 115
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	104		P	85 - 115
Sodium	95.9		P	85 - 115
Zinc	98.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	105		P	85 - 115
Boron	95.9		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	97.1		P	85 - 115
Copper	105		P	85 - 115
Lead	97.2		P	85 - 115
Nickel	107		P	85 - 115
Selenium	104		P	85 - 115
Silver	105		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 8321B
Batch ID: P360626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.3		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	93.5		P	30 - 150
Carbamazepine	94.1		P	40 - 150
Diuron	94.1		P	40 - 150
Fenuron	124		P	40 - 150
Fluridone	84.4		P	40 - 150
Hydrocodone	112		P	40 - 150
Ibuprofen	56.3		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	111		P	40 - 150
Linuron	77.0		P	40 - 150
MCPP	92.5		P	40 - 150
Naproxen	73.4		P	40 - 150
Primidone	131		P	40 - 150
Pyraclostrobin	69.1		P	40 - 150
Triclopyr	58.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	98.7		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	57.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070879	Barium	97.8	98.3	P/P	80 - 120
2070879	Calcium	103		P	80 - 120
2070879	Iron	102	103	P/P	80 - 120
2070879	Magnesium	105	109	P/P	80 - 120
2070879	Potassium	101	102	P/P	80 - 120
2070879	Sodium	99.7		P	80 - 120
2070879	Zinc	98.0	99.2	P/P	80 - 120
2070990	Barium	100		P	80 - 120
2070990	Calcium	102		P	80 - 120
2070990	Iron	104		P	80 - 120
2070990	Magnesium	108		P	80 - 120
2070990	Potassium	102		P	80 - 120
2070990	Sodium	99.3		P	80 - 120
2070990	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070879	Aluminum	104	101	P/P	80 - 120
2070879	Antimony	98.9	100	P/P	80 - 120
2070879	Arsenic	101	102	P/P	80 - 120
2070879	Boron	98.3	98.9	P/P	80 - 120
2070879	Cadmium	103	101	P/P	80 - 120
2070879	Chromium	95.3	96.4	P/P	80 - 120
2070879	Copper	107	103	P/P	80 - 120
2070879	Lead	98.0	98.0	P/P	80 - 120
2070879	Nickel	103	104	P/P	80 - 120
2070879	Selenium	98.6	98.9	P/P	80 - 120
2070879	Silver	106	105	P/P	80 - 120
2070879	Thallium	103	107	P/P	80 - 120
2070990	Aluminum	99.9		P	80 - 120
2070990	Antimony	99.6		P	80 - 120
2070990	Arsenic	101		P	80 - 120
2070990	Boron	99.5		P	80 - 120
2070990	Cadmium	101		P	80 - 120
2070990	Chromium	95.6		P	80 - 120
2070990	Copper	103		P	80 - 120
2070990	Lead	98.7		P	80 - 120
2070990	Nickel	104		P	80 - 120
2070990	Selenium	101		P	80 - 120
2070990	Silver	106		P	80 - 120
2070990	Thallium	104		P	80 - 120

Reference Method: EPA 8321B
Batch ID: P360626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071084	2,4-D	70.9	82.2	P/P	40 - 150
2071084	Acetaminophen	88.8	88.3	P/P	30 - 150
2071084	Bentazon	66.3	66.2	P/P	30 - 150
2071084	Carbamazepine	84.1	88.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071084	Diuron	81.7	77.6	P/P	40 - 150
2071084	Fenuron	132	123	P/P	40 - 150
2071084	Fluridone	103	110	P/P	40 - 150
2071084	Hydrocodone	112	109	P/P	40 - 150
2071084	Ibuprofen	55.8	57.4	P/P	40 - 150
2071084	Imazapyr	71.3	69.3	P/P	40 - 150
2071084	Linuron	65.7	72.6	P/P	40 - 150
2071084	MCPP	114	119	P/P	40 - 150
2071084	Naproxen	78.5	74.0	P/P	40 - 150
2071084	Primidone	80.5	71.4	P/P	40 - 150
2071084	Pyraclostrobin	86.5	96.7	P/P	40 - 150
2071084	Triclopyr	58.0	65.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070585	Acesulfame K	191	196	F/F	40 - 150
2070585	AMPA	92.5	90.7	P/P	40 - 150
2070585	Endothall	147	150	P/F	40 - 150
2070585	Glufosinate	65.9	65.0	P/P	40 - 150
2070585	Glyphosate	84.2	86.3	P/P	40 - 140
2070585	Sucralose	63.3	58.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070879	Barium	0.513	Spike	P	0 - 20
2070879	Calcium	1.69	Spike	P	0 - 20
2070879	Iron	1.23	Spike	P	0 - 20
2070879	Magnesium	2.49	Spike	P	0 - 20
2070879	Potassium	0.428	Spike	P	0 - 20
2070879	Sodium	2.29	Spike	P	0 - 20
2070879	Zinc	1.19	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070879	Aluminum	2.00	Spike	P	0 - 20
2070879	Antimony	1.43	Spike	P	0 - 20
2070879	Arsenic	1.29	Spike	P	0 - 20
2070879	Boron	0.519	Spike	P	0 - 20
2070879	Cadmium	1.39	Spike	P	0 - 20
2070879	Chromium	1.05	Spike	P	0 - 20
2070879	Copper	3.47	Spike	P	0 - 20
2070879	Lead	0.0299	Spike	P	0 - 20
2070879	Nickel	1.01	Spike	P	0 - 20
2070879	Selenium	0.286	Spike	P	0 - 20
2070879	Silver	1.57	Spike	P	0 - 20
2070879	Thallium	3.46	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071084	2,4-D	14.2	Spike	P	0 - 30
2071084	Acetaminophen	0.646	Spike	P	0 - 30
2071084	Bentazon	0.0887	Spike	P	0 - 30
2071084	Carbamazepine	3.49	Spike	P	0 - 30
2071084	Diuron	4.76	Spike	P	0 - 30
2071084	Fenuron	7.26	Spike	P	0 - 30
2071084	Fluridone	6.64	Spike	P	0 - 30
2071084	Hydrocodone	2.30	Spike	P	0 - 30
2071084	Ibuprofen	2.78	Spike	P	0 - 30
2071084	Imazapyr	2.60	Spike	P	0 - 30
2071084	Imidacloprid	3.12	Spike	P	0 - 30
2071084	Linuron	9.95	Spike	P	0 - 30
2071084	MCPP	4.10	Spike	P	0 - 30
2071084	Naproxen	5.88	Spike	P	0 - 30
2071084	Primidone	10.9	Spike	P	0 - 30
2071084	Pyraclostrobin	11.2	Spike	P	0 - 30
2071084	Triclopyr	12.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070585	Acesulfame K	2.22	Spike	P	0 - 30
2070585	AMPA	1.95	Spike	P	0 - 30
2070585	Endothall	2.28	Spike	P	0 - 30
2070585	Glufosinate	1.42	Spike	P	0 - 30
2070585	Glyphosate	2.48	Spike	P	0 - 30
2070585	Sucralose	7.04	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: 2070985

Field Sample ID: G1NE0906 - PAR1491

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.3	P	30 - 160
EPA 8321B	Diuron-d6	82.7	P	30 - 160
EPA 8321B	Endothall-d6	118	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	58.4	P	30 - 160
EPA 8321B	Primidone-d5	98.9	P	30 - 160
EPA 8321B	Sucralose-d6	80.0	P	30 - 160

Lab Sample ID: 2070986

Field Sample ID: G1NE0917 - PAR262

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.6	P	30 - 160
EPA 8321B	Diuron-d6	71.9	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	87.8	P	30 - 160
EPA 8321B	Sucralose-d6	79.9	P	30 - 160

Lab Sample ID: 2070987

Field Sample ID: G1NE0907 - MillBel

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	67.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.2	P	30 - 160
EPA 8321B	Diuron-d6	80.7	P	30 - 160
EPA 8321B	Endothall-d6	119	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	44.8	P	30 - 160
EPA 8321B	Primidone-d5	90.5	P	30 - 160
EPA 8321B	Sucralose-d6	73.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90161

Included Lab Sample IDs: 2070985, 2070986, 2070987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	95.1	116	P/P	60 - 160
Glufosinate	92.6	90.8	P/P	60 - 160
Glyphosate	80.1	78.6	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90166

Included Lab Sample IDs: 2070988, 2070989, 2070990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	99.3	P/P	90 - 110
Barium	100	100	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Calcium	101	100	P/P	90 - 110
Iron	100	99.6	P/P	90 - 110
Iron	99.6	99.6	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.0	99.0	P/P	90 - 110
Potassium	99.0	98.7	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	97.9	100	P/P	90 - 110
Zinc	101	99.3	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90203

Included Lab Sample IDs: 2070985, 2070986, 2070987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	126	P/P	60 - 160
Endothall	122	117	P/P	60 - 160
Sucralose	91.5	108	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90230

Included Lab Sample IDs: 2070988, 2070989, 2070990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	98.0	P/P	90 - 110
Antimony	98.9	98.2	P/P	90 - 110
Arsenic	100	99.9	P/P	90 - 110
Boron	98.5	100	P/P	90 - 110
Chromium	99.7	100	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Lead	95.9	97.5	P/P	90 - 110
Nickel	100	102	P/P	90 - 110
Selenium	101	99.0	P/P	90 - 110
Silver	104	105	P/P	90 - 110
Thallium	95.0	96.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90254

Included Lab Sample IDs: 2070988, 2070989, 2070990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	97.6	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2070985, 2070986, 2070987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	85.3	P/P	50 - 150
Acetaminophen	129	117	P/P	60 - 160
Bentazon	91.2	88.8	P/P	50 - 160
Carbamazepine	109	105	P/P	60 - 150
Diuron	115	107	P/P	60 - 150
Fenuron	109	110	P/P	60 - 150
Fluridone	110	106	P/P	60 - 160
Hydrocodone	104	101	P/P	60 - 150
Ibuprofen	111	103	P/P	50 - 160
Imazapyr	98.4	105	P/P	50 - 150
Imidacloprid	80.4	101	P/P	60 - 150
Linuron	96.0	92.9	P/P	60 - 150
MCP	94.2	81.8	P/P	50 - 150
Naproxen	119	103	P/P	50 - 160
Primidone	108	82.8	P/P	60 - 150
Pyraclorobin	130	121	P/P	60 - 150
Triclopyr	102	103	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	98.6	97.8	98.3	100		0.513
	Calcium	101	103	102			1.69
	Iron	102	102	103	104		1.23
	Magnesium	108	105	109	108		2.49
	Potassium	104	101	102	102		0.428
	Sodium	95.9	99.7	99.3			2.29
	Zinc	98.7	98.0	99.2	100		1.19
EPA 200.8 Rev. 5.4	Aluminum	98.8	104	101	99.9		2.00
	Antimony	100	98.9	100	99.6		1.43
	Arsenic	105	101	102	101		1.29
	Boron	95.9	98.3	98.9	99.5		0.519
	Cadmium	102	103	101	101		1.39
	Chromium	97.1	95.3	96.4	95.6		1.05
	Copper	105	107	103	103		3.47
	Lead	97.2	98.0	98.0	98.7		0.0299
	Nickel	107	103	104	104		1.01
	Selenium	104	98.6	98.9	101		0.286
	Silver	105	106	105	106		1.57
	Thallium	102	103	107	104		3.46
EPA 8321B	2,4-D	82.3	70.9	82.2			14.2
	Acesulfame K	98.1	191	196			2.22
	Acetaminophen	111	88.8	88.3			0.646
	AMPA	98.7	92.5	90.7			1.95
	Bentazon	93.5	66.3	66.2			0.0887
	Carbamazepine	94.1	84.1	88.2			3.49
	Diuron	94.1	81.7	77.6			4.76
	Endothall	112	147	150			2.28
	Fenuron	124	132	123			7.26
	Fluridone	84.4	103	110			6.64
	Glufosinate	104	65.9	65.0			1.42
	Glyphosate	108	84.2	86.3			2.48
	Hydrocodone	112	112	109			2.30
	Ibuprofen	56.3	55.8	57.4			2.78
	Imazapyr	102	71.3	69.3			2.60
	Imidacloprid	111					3.12
	Linuron	77.0	65.7	72.6			9.95
	MCPP	92.5	114	119			4.10
	Naproxen	73.4	78.5	74.0			5.88
	Primidone	131	80.5	71.4			10.9
	Pyraclostrobin	69.1	86.5	96.7			11.2
	Sucralose	57.2	63.3	58.7			7.04
	Triclopyr	58.4	58.0	65.6			12.3

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	2070988, 2070989, 2070990
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2070988, 2070989, 2070990
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2070985, 2070986, 2070987

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	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/21/2019 15:09	Betina Topolski	2070988
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/21/2019 15:31	Betina Topolski	2070989
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/21/2019 15:36	Betina Topolski	2070990
EPA 200.8 Rev. 5.4	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 04:03	Robert K Palmer	2070988
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 04:13	Robert K Palmer	2070989
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 04:22	Robert K Palmer	2070990
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 22:35	Robert K Palmer	2070988
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 22:44	Robert K Palmer	2070989
	03/19/2019	03/20/2019 16:30	Elliott D. Healy	03/26/2019 22:54	Robert K Palmer	2070990
	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 14:48	Juyoung Kim	2070985
EPA 8321B	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 14:58	Juyoung Kim	2070986
	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 15:09	Juyoung Kim	2070987
	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 03:56	Juyoung Kim	2070985
	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 04:10	Juyoung Kim	2070986
	03/19/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 04:24	Juyoung Kim	2070987
	03/19/2019	03/20/2019 14:00	Hoor Shaik	03/27/2019 06:56	Juyoung Kim	2070985
	03/19/2019	03/20/2019 14:00	Hoor Shaik	03/27/2019 07:31	Juyoung Kim	2070986
	03/19/2019	03/20/2019 14:00	Hoor Shaik	03/27/2019 08:05	Juyoung Kim	2070987