

Chemical Analysis Report

NE-DIST-2019-08-21-01

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

Event Description: **Alachua County August SMP**
Request ID: **RQ-2019-08-05-90**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 18-SEP-2019 09:50

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: 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: Sweetwater Branch - N of SE 4th St.

Collection Date/Time: 08/20/2019 11:45

Field ID: G1NE0916

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113071	EPA 8321B	2,4-D	0.031		ug/L	P369393	
		Acesulfame K**	0.10	U	ug/L	P369557	
		AMPA**	0.22	I	ug/L	P369557	
		Sucralose**	0.094		ug/L	P369557	
		Acetaminophen**	0.022	I	ug/L	P369393	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369393	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	0.39	I	ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369393	
		Bentazon	0.0083		ug/L	P369393	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369393	
		Carbamazepine**	8.0E-04	U	ug/L	P369393	
		Clothianidin**	0.0020	U	ug/L	P369393	
		Dinotefuran**	0.0031	I	ug/L	P369393	
		Diuron	0.0088		ug/L	P369393	
		Fenuron	0.016	U	ug/L	P369393	
		Fluridone**	0.0022	I	ug/L	P369393	
		Imazapyr**	0.026		ug/L	P369393	
		Hydrocodone**	0.0020	U	ug/L	P369393	
		Ibuprofen**	0.020	U	ug/L	P369393	
		Imidacloprid	0.043		ug/L	P369393	MS
		Linuron	0.0040	U	ug/L	P369393	
		Mandestrobin**	0.0020	UJ	ug/L	P369393	
		MCPP	0.0020	U	ug/L	P369393	
		Naproxen**	0.0080	U	ug/L	P369393	
		Primidone**	0.0040	U	ug/L	P369393	
		Pyraclostrobin**	0.0020	U	ug/L	P369393	
		Thiamethoxam**	0.0020	U	ug/L	P369393	MS
		Tolfenpyrad**	0.0020	U	ug/L	P369393	
		Triclopyr**	0.0040	U	ug/L	P369393	
2113075	EPA 200.7 Rev. 4.4	Barium	21.4		ug/L	P369531	
		Calcium	49.6		mg/L	P369531	
		Iron	250		ug/L	P369531	
		Magnesium	7.09		mg/L	P369531	
		Potassium	1.3		mg/L	P369531	
		Sodium	8.4		mg/L	P369531	
		Zinc	6.5	I	ug/L	P369531	
	EPA 200.8 Rev. 5.4	Aluminum	116		ug/L	P369531	
		Antimony	0.40		ug/L	P369531	
		Arsenic	1.33		ug/L	P369531	
		Boron**	38.4		ug/L	P369531	
		Cadmium	0.030	I	ug/L	P369531	
		Chromium	0.64	I	ug/L	P369531	

Field ID: G1NE0916

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113075	EPA 200.8 Rev. 5.4	Copper	1.85		ug/L	P369531	
		Lead	1.33		ug/L	P369531	
		Nickel	0.55	I	ug/L	P369531	
		Selenium	0.27	I	ug/L	P369531	
		Silver	0.010	U	ug/L	P369531	
		Thallium	0.10	U	ug/L	P369531	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon, dinotefuran and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Sweetwater Branch - N of SE 4th St.

Collection Date/Time: 08/20/2019 11:45

Field ID: G1NE0916DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113072	EPA 8321B	2,4-D	0.026		ug/L	P369393	
		Acesulfame K**	0.10	U	ug/L	P369557	
		AMPA**	0.20	I	ug/L	P369557	
		Sucralose**	0.10		ug/L	P369557	
		Acetaminophen**	0.021	I	ug/L	P369393	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369393	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	0.38	I	ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369393	
		Bentazon	0.0088		ug/L	P369393	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369393	
		Carbamazepine**	8.0E-04	U	ug/L	P369393	
		Clothianidin**	0.0020	U	ug/L	P369393	
		Dinotefuran**	0.0033	I	ug/L	P369393	
		Diuron	0.011		ug/L	P369393	
		Fenuron	0.016	U	ug/L	P369393	
		Fluridone**	0.0021	I	ug/L	P369393	
		Imazapyr**	0.031		ug/L	P369393	
		Hydrocodone**	0.0020	U	ug/L	P369393	
		Ibuprofen**	0.020	U	ug/L	P369393	
		Imidacloprid	0.042		ug/L	P369393	MS
		Linuron	0.0040	U	ug/L	P369393	
		Mandestrobin**	0.0020	UJ	ug/L	P369393	
		MCPP	0.0020	U	ug/L	P369393	
		Naproxen**	0.0080	U	ug/L	P369393	
		Primidone**	0.0040	U	ug/L	P369393	
		Pyraclostrobin**	0.0020	U	ug/L	P369393	
		Thiamethoxam**	0.0020	U	ug/L	P369393	MS
		Tolfenpyrad**	0.0020	U	ug/L	P369393	
		Triclopyr**	0.0040	U	ug/L	P369393	
2113076	EPA 200.7 Rev. 4.4	Barium	22.0		ug/L	P369531	
		Calcium	50.4		mg/L	P369531	
		Iron	260		ug/L	P369531	
		Magnesium	7.16		mg/L	P369531	
		Potassium	1.4		mg/L	P369531	
		Sodium	8.4		mg/L	P369531	
		Zinc	6.8	I	ug/L	P369531	
	EPA 200.8 Rev. 5.4	Aluminum	132		ug/L	P369531	
		Antimony	0.40		ug/L	P369531	
		Arsenic	1.34		ug/L	P369531	
		Boron**	39.1		ug/L	P369531	
		Cadmium	0.028	I	ug/L	P369531	
		Chromium	0.67	I	ug/L	P369531	

Field ID: G1NE0916DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113076	EPA 200.8 Rev. 5.4	Copper	1.87		ug/L	P369531	
		Lead	1.36		ug/L	P369531	
		Nickel	0.74	I	ug/L	P369531	
		Selenium	0.29	I	ug/L	P369531	
		Silver	0.010	U	ug/L	P369531	
		Thallium	0.10	U	ug/L	P369531	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon, dinotefuran and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Sweetwater Branch - Upstream of SR 331

Collection Date/Time: 08/20/2019 12:40

Field ID: G1NE0905

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113073	EPA 8321B	2,4-D	0.039		ug/L	P369393	
		Acesulfame K**	0.10	U	ug/L	P369557	
		AMPA**	0.13	I	ug/L	P369557	
		Sucralose**	4.0		ug/L	P369557	
		Acetaminophen**	0.0080	U	ug/L	P369393	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.046		ug/L	P369393	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	0.10	U	ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369393	
		Bentazon	0.0035		ug/L	P369393	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369393	
		Carbamazepine**	0.059		ug/L	P369393	
		Clothianidin**	0.0052	I	ug/L	P369393	
		Dinotefuran**	0.015		ug/L	P369393	
		Diuron	0.0086		ug/L	P369393	
		Fenuron	0.016	U	ug/L	P369393	
		Fluridone**	0.0014	I	ug/L	P369393	
		Imazapyr**	0.026		ug/L	P369393	
		Hydrocodone**	0.0020	U	ug/L	P369393	
		Ibuprofen**	0.020	U	ug/L	P369393	
		Imidacloprid	0.086		ug/L	P369393	MS
		Linuron	0.0040	U	ug/L	P369393	
		Mandestrobin**	0.0020	UJ	ug/L	P369393	
		MCPP	0.0087		ug/L	P369393	
		Naproxen**	0.0080	U	ug/L	P369393	
		Primidone**	0.046		ug/L	P369393	
		Pyraclostrobin**	0.0020	U	ug/L	P369393	
		Thiamethoxam**	0.0020	U	ug/L	P369393	MS
		Tolfenpyrad**	0.0020	U	ug/L	P369393	
		Triclopyr**	0.0040	U	ug/L	P369393	
2113077	EPA 200.7 Rev. 4.4	Barium	16.3		ug/L	P369531	
		Calcium	53.2		mg/L	P369531	
		Iron	200		ug/L	P369531	
		Magnesium	10.6		mg/L	P369531	
		Potassium	3.9		mg/L	P369531	
		Sodium	41.8		mg/L	P369531	
		Zinc	8.2	I	ug/L	P369531	
	EPA 200.8 Rev. 5.4	Aluminum	238		ug/L	P369531	
		Antimony	0.35		ug/L	P369531	
		Arsenic	0.87		ug/L	P369531	
		Boron**	69.3		ug/L	P369531	
		Cadmium	0.021	I	ug/L	P369531	
		Chromium	0.76	I	ug/L	P369531	

Field ID: G1NE0905

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113077	EPA 200.8 Rev. 5.4	Copper	1.28		ug/L	P369531	
		Lead	1.57		ug/L	P369531	
		Nickel	0.75	I	ug/L	P369531	
		Selenium	0.20	I	ug/L	P369531	
		Silver	0.010	U	ug/L	P369531	
		Thallium	0.10	U	ug/L	P369531	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon, dinotefuran and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Bivens Arm Lake - west of US 441, and south of SW 16th Street **Collection Date/Time: 08/20/2019 14:00**

Field ID: G1NE0904

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113074	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P369557	
		2,4-D	0.12		ug/L	P369584	MS
		AMPA**	0.10	I	ug/L	P369557	
		Sucralose**	0.072		ug/L	P369557	
		Acetaminophen**	0.0080	U	ug/L	P369584	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369584	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	0.23	I	ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369584	
		Bentazon	8.0E-04	U	ug/L	P369584	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369584	
		Carbamazepine**	8.0E-04	U	ug/L	P369584	
		Clothianidin**	0.0020	U	ug/L	P369584	
		Dinotefuran**	0.0020	U	ug/L	P369584	
		Diuron	0.084		ug/L	P369584	
		Fenuron	0.091		ug/L	P369584	
		Fluridone**	0.0017	I	ug/L	P369584	
		Imazapyr**	0.025		ug/L	P369584	
		Hydrocodone**	0.0020	U	ug/L	P369584	
		Ibuprofen**	0.020	U	ug/L	P369584	
		Imidacloprid	0.018		ug/L	P369584	MS
		Linuron	0.0040	U	ug/L	P369584	
		Mandestrobin**	0.0020	UJ	ug/L	P369584	
		MCPP	0.0020	U	ug/L	P369584	MS
		Naproxen**	0.0080	U	ug/L	P369584	
		Primidone**	0.0040	U	ug/L	P369584	
		Pyraclostrobin**	0.0020	U	ug/L	P369584	
		Thiamethoxam**	0.0020	U	ug/L	P369584	
		Tolfenpyrad**	0.0020	U	ug/L	P369584	
		Triclopyr**	0.0040	U	ug/L	P369584	
2113078	EPA 200.7 Rev. 4.4	Barium	12.9		ug/L	P369531	
		Calcium	29.2		mg/L	P369531	
		Iron	100	I	ug/L	P369531	
		Magnesium	3.28		mg/L	P369531	
		Potassium	1.8		mg/L	P369531	
		Sodium	5.0		mg/L	P369531	
		Zinc	5.0	U	ug/L	P369531	
	EPA 200.8 Rev. 5.4	Aluminum	364		ug/L	P369531	
		Antimony	0.46		ug/L	P369531	
		Arsenic	1.11		ug/L	P369531	
		Boron**	23.6		ug/L	P369531	
		Cadmium	0.020	U	ug/L	P369531	

Field ID: G1NE0904

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113078	EPA 200.8 Rev. 5.4	Chromium	0.90	I	ug/L	P369531	
		Copper	1.21		ug/L	P369531	
		Lead	2.44		ug/L	P369531	
		Nickel	0.50	U	ug/L	P369531	
		Selenium	0.20	U	ug/L	P369531	
		Silver	0.010	U	ug/L	P369531	
		Thallium	0.10	U	ug/L	P369531	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

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: P369531

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: P369393

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369393

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P369557

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: P369584

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
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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	105		P	85 - 115
Calcium	108		P	85 - 115
Iron	109		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	108		P	85 - 115
Sodium	110		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	85 - 115
Antimony	96.6		P	85 - 115
Arsenic	103		P	85 - 115
Boron	101		P	85 - 115
Cadmium	99.7		P	85 - 115
Chromium	101		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Selenium	104		P	85 - 115
Silver	106		P	85 - 115
Thallium	97.7		P	85 - 115

Reference Method: EPA 8321B
Batch ID: P369393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.0		P	40 - 160
Acetaminophen	80.1		P	30 - 160
Acetamiprid	84.7		P	40 - 160
Afidopyropen	90.3		P	40 - 160
Bentazon	94.0		P	30 - 160
Benzovindiflupyr	95.4		P	40 - 160
Carbamazepine	92.7		P	40 - 160
Clothianidin	83.2		P	40 - 160
Dinotefuran	92.0		P	40 - 160
Diuron	108		P	40 - 160
Fenuron	104		P	40 - 160
Fluridone	97.4		P	40 - 160
Hydrocodone	97.5		P	40 - 160
Ibuprofen	89.5		P	30 - 160
Imazapyr	109		P	40 - 160
Imidacloprid	108		P	40 - 160
Linuron	91.5		P	40 - 160
Mandestrobin	93.5		P	40 - 160
MCPP	103		P	40 - 160
Naproxen	89.3		P	40 - 160
Primidone	93.5		P	40 - 160
Pyraclostrobin	93.4		P	30 - 160
Thiamethoxam	103		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P369393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Tolfenpyrad	59.6		P	40 - 160
Triclopyr	65.4		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P369557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.1		P	40 - 150
AMPA	97.9		P	40 - 150
Endothall	96.3		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	122		P	40 - 140
Sucralose	60.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	128		P	40 - 160
Acetaminophen	80.9		P	30 - 160
Acetamiprid	86.1		P	40 - 160
Afidopyropen	67.7		P	40 - 160
Bentazon	90.2		P	30 - 160
Benzovindiflupyr	75.5		P	40 - 160
Carbamazepine	84.4		P	40 - 160
Clothianidin	78.7		P	40 - 160
Dinotefuran	82.1		P	40 - 160
Diuron	83.7		P	40 - 160
Fenuron	94.0		P	40 - 160
Fluridone	80.2		P	40 - 160
Hydrocodone	84.9		P	40 - 160
Ibuprofen	69.6		P	30 - 160
Imazapyr	109		P	40 - 160
Imidacloprid	94.9		P	40 - 160
Linuron	64.8		P	40 - 160
Mandestrobin	74.9		P	40 - 160
MCPP	138		P	40 - 160
Naproxen	79.4		P	40 - 160
Primidone	83.7		P	40 - 160
Pyraclostrobin	78.6		P	30 - 160
Thiamethoxam	92.1		P	40 - 160
Tolfenpyrad	55.7		P	40 - 160
Triclopyr	117		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113054	Barium	104	105	P/P	80 - 120
2113054	Calcium	109	108	P/P	80 - 120
2113054	Iron	109	108	P/P	80 - 120
2113054	Magnesium	112	111	P/P	80 - 120
2113054	Potassium	115	116	P/P	80 - 120
2113054	Sodium	102	96.5	P/P	80 - 120
2113054	Zinc	103	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113054	Aluminum	101	99.5	P/P	80 - 120
2113054	Antimony	96.2	95.9	P/P	80 - 120
2113054	Arsenic	101	100	P/P	80 - 120
2113054	Boron	107	104	P/P	80 - 120
2113054	Cadmium	99.5	101	P/P	80 - 120
2113054	Chromium	103	102	P/P	80 - 120
2113054	Copper	100	100	P/P	80 - 120
2113054	Lead	101	101	P/P	80 - 120
2113054	Nickel	102	102	P/P	80 - 120
2113054	Selenium	101	100	P/P	80 - 120
2113054	Silver	105	107	P/P	80 - 120
2113054	Thallium	98.5	100	P/P	80 - 120

Reference Method: EPA 8321B
Batch ID: P369393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112942	2,4-D	134	130	P/P	40 - 160
2112942	Acetaminophen	85.9	77.4	P/P	30 - 160
2112942	Acetamiprid	86.2	89.1	P/P	40 - 160
2112942	Afidopyropen	81.8	86.3	P/P	40 - 160
2112942	Benzovindiflupyr	94.3	93.4	P/P	40 - 160
2112942	Carbamazepine	97.0	94.1	P/P	40 - 160
2112942	Clothianidin	114	109	P/P	40 - 160
2112942	Diuron	105	107	P/P	40 - 160
2112942	Fenuron	91.1	83.6	P/P	40 - 160
2112942	Fluridone	101	92.1	P/P	40 - 160
2112942	Hydrocodone	99.9	88.0	P/P	40 - 160
2112942	Ibuprofen	90.9	90.1	P/P	30 - 160
2112942	Imidacloprid	206	198	F/F	40 - 160
2112942	Linuron	94.2	92.7	P/P	40 - 160
2112942	Mandestrobin	90.4	92.8	P/P	40 - 160
2112942	MCPD	153	141	P/P	40 - 160
2112942	Naproxen	98.7	109	P/P	40 - 160
2112942	Primidone	116	101	P/P	40 - 160
2112942	Pyraclostrobin	84.2	87.6	P/P	30 - 160
2112942	Thiamethoxam	166	153	F/P	40 - 160
2112942	Tolfenpyrad	50.4	50.6	P/P	40 - 160
2112942	Triclopyr	102	93.9	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P369557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113071	Acesulfame K	86.2	80.2	P/P	40 - 150
2113071	AMPA	58.9	51.1	P/P	40 - 150
2113071	Endothall	56.6	59.5	P/P	40 - 150
2113071	Glufosinate	86.3	81.1	P/P	40 - 150
2113071	Glyphosate	96.9	89.9	P/P	40 - 140
2113071	Sucralose	67.5	74.8	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P369584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113805	2,4-D	158	165	P/F	40 - 160
2113805	Acetaminophen	73.6	80.7	P/P	30 - 160
2113805	Acetamiprid	94.7	101	P/P	40 - 160
2113805	Afidopyropen	76.4	95.9	P/P	40 - 160
2113805	Bentazon	70.9	83.1	P/P	30 - 160
2113805	Benzovindiflupyr	79.9	85.0	P/P	40 - 160
2113805	Carbamazepine	80.7	86.9	P/P	40 - 160
2113805	Clothianidin	84.3	86.1	P/P	40 - 160
2113805	Dinotefuran	91.4	99.1	P/P	40 - 160
2113805	Diuron	79.8	86.9	P/P	40 - 160
2113805	Fenuron	72.4	79.0	P/P	40 - 160
2113805	Fluridone	79.4	85.5	P/P	40 - 160
2113805	Hydrocodone	80.7	88.6	P/P	40 - 160
2113805	Ibuprofen	79.5	89.1	P/P	30 - 160
2113805	Imazapyr	94.8	109	P/P	40 - 160
2113805	Imidacloprid	174	185	F/F	40 - 160
2113805	Linuron	67.4	69.2	P/P	40 - 160
2113805	Mandestrobin	80.8	84.7	P/P	40 - 160
2113805	MCP	171	181	F/F	40 - 160
2113805	Naproxen	110	126	P/P	40 - 160
2113805	Primidone	92.0	92.3	P/P	40 - 160
2113805	Pyraclostrobin	81.9	84.1	P/P	30 - 160
2113805	Thiamethoxam	125	137	P/P	40 - 160
2113805	Tolfenpyrad	54.2	58.6	P/P	40 - 160
2113805	Triclopyr	141	134	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113054	Barium	0.233	Spike	P	0 - 20
2113054	Calcium	1.14	Spike	P	0 - 20
2113054	Iron	0.904	Spike	P	0 - 20
2113054	Magnesium	0.760	Spike	P	0 - 20
2113054	Potassium	1.20	Spike	P	0 - 20
2113054	Sodium	3.73	Spike	P	0 - 20
2113054	Zinc	0.805	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113054	Aluminum	1.31	Spike	P	0 - 20
2113054	Antimony	0.372	Spike	P	0 - 20
2113054	Arsenic	0.665	Spike	P	0 - 20
2113054	Boron	2.33	Spike	P	0 - 20
2113054	Cadmium	1.16	Spike	P	0 - 20
2113054	Chromium	0.575	Spike	P	0 - 20
2113054	Copper	0.424	Spike	P	0 - 20
2113054	Lead	0.0350	Spike	P	0 - 20
2113054	Nickel	0.0118	Spike	P	0 - 20
2113054	Selenium	0.768	Spike	P	0 - 20
2113054	Silver	2.63	Spike	P	0 - 20
2113054	Thallium	1.81	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P369393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112942	2,4-D	3.32	Spike	P	0 - 30
2112942	Acetaminophen	10.4	Spike	P	0 - 30
2112942	Acetamiprid	3.25	Spike	P	0 - 30
2112942	Afidopyropen	5.40	Spike	P	0 - 30
2112942	Bentazon	7.75	Spike	P	0 - 30
2112942	Benzovindiflupyr	0.911	Spike	P	0 - 30
2112942	Carbamazepine	2.99	Spike	P	0 - 30
2112942	Clothianidin	4.95	Spike	P	0 - 30
2112942	Dinotefuran	4.22	Spike	P	0 - 30
2112942	Diuron	1.48	Spike	P	0 - 30
2112942	Fenuron	8.58	Spike	P	0 - 30
2112942	Fluridone	9.10	Spike	P	0 - 30
2112942	Hydrocodone	12.7	Spike	P	0 - 30
2112942	Ibuprofen	0.876	Spike	P	0 - 30
2112942	Imazapyr	4.49	Spike	P	0 - 30
2112942	Imidacloprid	4.01	Spike	P	0 - 30
2112942	Linuron	1.53	Spike	P	0 - 30
2112942	Mandestrobin	2.63	Spike	P	0 - 30
2112942	MCP	8.27	Spike	P	0 - 30
2112942	Naproxen	10.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P369393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112942	Primidone	13.6	Spike	P	0 - 30
2112942	Pyraclostrobin	3.96	Spike	P	0 - 30
2112942	Thiamethoxam	8.35	Spike	P	0 - 30
2112942	Tolfenpyrad	0.331	Spike	P	0 - 30
2112942	Triclopyr	7.89	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P369557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113071	Acesulfame K	7.27	Spike	P	0 - 30
2113071	AMPA	10.1	Spike	P	0 - 30
2113071	Endothall	5.05	Spike	P	0 - 30
2113071	Glufosinate	6.28	Spike	P	0 - 30
2113071	Glyphosate	5.31	Spike	P	0 - 30
2113071	Sucralose	9.76	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P369584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113805	2,4-D	4.02	Spike	P	0 - 30
2113805	Acetaminophen	9.14	Spike	P	0 - 30
2113805	Acetamiprid	6.19	Spike	P	0 - 30
2113805	Afidopyropen	22.5	Spike	P	0 - 30
2113805	Bentazon	8.56	Spike	P	0 - 30
2113805	Benzovindiflupyr	6.14	Spike	P	0 - 30
2113805	Carbamazepine	7.44	Spike	P	0 - 30
2113805	Clothianidin	2.13	Spike	P	0 - 30
2113805	Dinotefuran	8.03	Spike	P	0 - 30
2113805	Diuron	8.47	Spike	P	0 - 30
2113805	Fenuron	8.71	Spike	P	0 - 30
2113805	Fluridone	7.34	Spike	P	0 - 30
2113805	Hydrocodone	9.37	Spike	P	0 - 30
2113805	Ibuprofen	11.4	Spike	P	0 - 30
2113805	Imazapyr	10.9	Spike	P	0 - 30
2113805	Imidacloprid	6.34	Spike	P	0 - 30
2113805	Linuron	2.63	Spike	P	0 - 30
2113805	Mandestrobin	4.78	Spike	P	0 - 30
2113805	MCPP	5.90	Spike	P	0 - 30
2113805	Naproxen	13.2	Spike	P	0 - 30
2113805	Primidone	0.342	Spike	P	0 - 30
2113805	Pyraclostrobin	2.60	Spike	P	0 - 30
2113805	Thiamethoxam	9.12	Spike	P	0 - 30
2113805	Tolfenpyrad	7.88	Spike	P	0 - 30
2113805	Triclopyr	4.49	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: 2113071
Field Sample ID: G1NE0916

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	157	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.4	P	30 - 160
EPA 8321B	Diuron-d6	97.2	P	30 - 160
EPA 8321B	Endothall-d6	61.9	P	30 - 160
EPA 8321B	Endothall-d6	61.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	117	P	30 - 160
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	84.0	P	30 - 160
EPA 8321B	Sucralose-d6	84.0	P	30 - 160

Lab Sample ID: 2113072
Field Sample ID: G1NE0916DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	150	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.2	P	30 - 160
EPA 8321B	Diuron-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	63.5	P	30 - 160
EPA 8321B	Endothall-d6	63.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	127	P	30 - 160
EPA 8321B	Primidone-d5	127	P	30 - 160
EPA 8321B	Sucralose-d6	90.6	P	30 - 160
EPA 8321B	Sucralose-d6	90.6	P	30 - 160

Lab Sample ID: 2113073
Field Sample ID: G1NE0905

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	157	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	99.3	P	30 - 160
EPA 8321B	Endothall-d6	75.5	P	30 - 160
EPA 8321B	Endothall-d6	75.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	140	P	30 - 160
EPA 8321B	Primidone-d5	138	P	30 - 160
EPA 8321B	Sucralose-d6	44.9	P	30 - 160
EPA 8321B	Sucralose-d6	44.9	P	30 - 160

Lab Sample ID: 2113074
Field Sample ID: G1NE0904

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	155	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2113074
Field Sample ID: G1NE0904

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	76.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.4	P	30 - 160
EPA 8321B	Diuron-d6	85.6	P	30 - 160
EPA 8321B	Endothall-d6	86.1	P	30 - 160
EPA 8321B	Endothall-d6	86.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	69.6	P	30 - 160
EPA 8321B	Sucralose-d6	69.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93786

Included Lab Sample IDs: 2113071, 2113072, 2113073, 2113074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.3	93.6	P/P	60 - 160
Endothall	91.8	94.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93788

Included Lab Sample IDs: 2113071, 2113072, 2113073, 2113074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.8	100	P/P	60 - 160
Glufosinate	94.5	104	P/P	60 - 160
Glyphosate	97.7	108	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93792

Included Lab Sample IDs: 2113075, 2113076, 2113077, 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	101	P/P	90 - 110
Iron	102	100	P/P	90 - 110
Potassium	101	98.4	P/P	90 - 110
Sodium	93.5	92.7	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93822

Included Lab Sample IDs: 2113075, 2113076, 2113077, 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	101	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93838

Included Lab Sample IDs: 2113071, 2113072, 2113073, 2113074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	102	P/P	50 - 150
2,4-D	109	110	P/P	50 - 150
Acetaminophen	113	110	P/P	60 - 160
Acetaminophen	114	107	P/P	60 - 160
Acetamiprid	112	112	P/P	50 - 150
Acetamiprid	115	100	P/P	50 - 150
Afidopyropen	115	123	P/P	50 - 150
Afidopyropen	75.0	96.7	P/P	50 - 150
Bentazon	101	97.3	P/P	50 - 160
Bentazon	104	106	P/P	50 - 160
Benzovindiflupyr	112	115	P/P	50 - 150
Benzovindiflupyr	96.3	99.1	P/P	50 - 150
Carbamazepine	113	113	P/P	60 - 150
Carbamazepine	113	112	P/P	60 - 150
Clothianidin	114	108	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93838

Included Lab Sample IDs: 2113071, 2113072, 2113073, 2113074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Clothianidin	99.9	103	P/P	60 - 150
Dinotefuran	104	105	P/P	50 - 150
Dinotefuran	106	106	P/P	50 - 150
Diuron	101	115	P/P	60 - 150
Diuron	119	119	P/P	60 - 150
Fenuron	110	110	P/P	60 - 150
Fenuron	110	114	P/P	60 - 150
Fluridone	100	103	P/P	60 - 160
Fluridone	106	105	P/P	60 - 160
Hydrocodone	111	118	P/P	60 - 150
Hydrocodone	113	108	P/P	60 - 150
Ibuprofen	82.2	84.0	P/P	50 - 160
Ibuprofen	84.4	70.1	P/P	50 - 160
Imazapyr	109	101	P/P	50 - 150
Imazapyr	94.2	116	P/P	50 - 150
Imidacloprid	103	105	P/P	60 - 150
Imidacloprid	107	106	P/P	60 - 150
Linuron	113	114	P/P	60 - 150
Linuron	95.7	94.3	P/P	60 - 150
Mandestrobin	108	113	P/P	50 - 150
Mandestrobin	116	119	P/P	50 - 150
MCP	93.3	94.5	P/P	50 - 150
MCP	99.5	101	P/P	50 - 150
Naproxen	113	118	P/P	50 - 160
Naproxen	98.8	130	P/P	50 - 160
Primidone	102	101	P/P	60 - 150
Primidone	102	102	P/P	60 - 150
Pyraclostrobin	101	109	P/P	60 - 150
Pyraclostrobin	118	115	P/P	60 - 150
Thiamethoxam	106	95.7	P/P	50 - 150
Thiamethoxam	106	102	P/P	50 - 150
Tolfenpyrad	101	102	P/P	60 - 150
Tolfenpyrad	108	106	P/P	60 - 150
Triclopyr	104	95.4	P/P	50 - 150
Triclopyr	108	101	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A93861

Included Lab Sample IDs: 2113071, 2113072, 2113073, 2113074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.5	79.6	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94112

Included Lab Sample IDs: 2113075, 2113076, 2113077, 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	105	P/P	90 - 110
Aluminum	104	103	P/P	90 - 110
Antimony	97.7	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94112

Included Lab Sample IDs: 2113075, 2113076, 2113077, 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.7	97.7	P/P	90 - 110
Arsenic	105	105	P/P	90 - 110
Arsenic	106	105	P/P	90 - 110
Boron	104	108	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Copper	106	107	P/P	90 - 110
Copper	106	106	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Lead	105	106	P/P	90 - 110
Nickel	105	105	P/P	90 - 110
Nickel	105	107	P/P	90 - 110
Silver	106	107	P/P	90 - 110
Silver	107	107	P/P	90 - 110
Thallium	96.9	97.8	P/P	90 - 110
Thallium	97.8	97.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94139

Included Lab Sample IDs: 2113075, 2113076, 2113077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	101	102	P/P	90 - 110
Selenium	103	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94206

Included Lab Sample IDs: 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	98.9	103	P/P	90 - 110
Selenium	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94208

Included Lab Sample IDs: 2113078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	97.6	99.4	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 LCS	SMP	MS
EPA 200.7 Rev. 4.4	Barium	105	104	105			0.233
	Calcium	108	109	108			1.14
	Iron	109	109	108			0.904
	Magnesium	111	112	111			0.760
	Potassium	108	115	116			1.20
	Sodium	110	102	96.5			3.73
	Zinc	105	103	104			0.805
EPA 200.8 Rev. 5.4	Aluminum	99.1	101	99.5			1.31
	Antimony	96.6	96.2	95.9			0.372
	Arsenic	103	101	100			0.665
	Boron	101	107	104			2.33
	Cadmium	99.7	99.5	101			1.16
	Chromium	101	103	102			0.575
	Copper	101	100	100			0.424
	Lead	101	101	101			0.0350
	Nickel	101	102	102			0.0118
	Selenium	104	101	100			0.768
	Silver	106	105	107			2.63
	Thallium	97.7	98.5	100			1.81
EPA 8321B	2,4-D	94.0	134	130			3.32
	2,4-D	128	165	158			4.02
	Acesulfame K	95.1	86.2	80.2			7.27
	Acetaminophen	80.1	85.9	77.4			10.4
	Acetaminophen	80.9	73.6	80.7			9.14
	Acetamiprid	84.7	86.2	89.1			3.25
	Acetamiprid	86.1	94.7	101			6.19
	Afidopyropen	90.3	81.8	86.3			5.40
	Afidopyropen	67.7	95.9	76.4			22.5
	AMPA	97.9	58.9	51.1			10.1
	Bentazon	94.0					7.75
	Bentazon	90.2	83.1	70.9			8.56
	Benzovindiflupyr	95.4	94.3	93.4			0.911
	Benzovindiflupyr	75.5	85.0	79.9			6.14
	Carbamazepine	92.7	97.0	94.1			2.99
	Carbamazepine	84.4	80.7	86.9			7.44
	Clothianidin	83.2	114	109			4.95
	Clothianidin	78.7	84.3	86.1			2.13
	Dinotefuran	92.0					4.22
	Dinotefuran	82.1	91.4	99.1			8.03
	Diuron	108	105	107			1.48
	Diuron	83.7	79.8	86.9			8.47
	Endothall	96.3	56.6	59.5			5.05
	Fenuron	104	91.1	83.6			8.58
	Fenuron	94.0	72.4	79.0			8.71
	Fluridone	97.4	101	92.1			9.10
	Fluridone	80.2	85.5	79.4			7.34
	Glufosinate	110	86.3	81.1			6.28
	Glyphosate	122	96.9	89.9			5.31
	Hydrocodone	97.5	99.9	88.0			12.7
	Hydrocodone	84.9	80.7	88.6			9.37
	Ibuprofen	89.5	90.9	90.1			0.876
	Ibuprofen	69.6	89.1	79.5			11.4
	Imazapyr	109					4.49
	Imazapyr	109	109	94.8			10.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Imidacloprid	108	206	198			4.01
	Imidacloprid	94.9	174	185			6.34
	Linuron	91.5	94.2	92.7			1.53
	Linuron	64.8	69.2	67.4			2.63
	Mandestrobin	93.5	90.4	92.8			2.63
	Mandestrobin	74.9	84.7	80.8			4.78
	MCPP	103	153	141			8.27
	MCPP	138	181	171			5.90
	Naproxen	89.3	98.7	109			10.3
	Naproxen	79.4	126	110			13.2
	Primidone	93.5	116	101			13.6
	Primidone	83.7	92.0	92.3			0.342
	Pyraclostrobin	93.4	84.2	87.6			3.96
	Pyraclostrobin	78.6	84.1	81.9			2.60
	Sucralose	60.4	67.5	74.8			9.76
	Thiamethoxam	103	166	153			8.35
	Thiamethoxam	92.1	125	137			9.12
	Tolfenpyrad	59.6	50.4	50.6			0.331
	Tolfenpyrad	55.7	58.6	54.2			7.88
	Triclopyr	65.4	102	93.9			7.89
	Triclopyr	117	134	141			4.49

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	2113075, 2113076, 2113077, 2113078
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2113075, 2113076, 2113077, 2113078
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2113071, 2113072, 2113073, 2113074
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2113071, 2113072, 2113073, 2113074

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	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/26/2019 10:39	Alexander Thompson	2113075
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/26/2019 10:46	Alexander Thompson	2113076
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/26/2019 10:53	Alexander Thompson	2113077
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/26/2019 11:00	Alexander Thompson	2113078
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/27/2019 13:55	Alexander Thompson	2113075
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/27/2019 14:03	Alexander Thompson	2113076
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/27/2019 14:10	Alexander Thompson	2113077
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/27/2019 14:17	Alexander Thompson	2113078
EPA 200.8 Rev. 5.4	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/11/2019 00:13	Robert K Palmer	2113075
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/11/2019 00:23	Robert K Palmer	2113076
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/11/2019 00:32	Robert K Palmer	2113077
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/11/2019 01:41	Robert K Palmer	2113078
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/12/2019 01:42	Robert K Palmer	2113075
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/12/2019 01:48	Robert K Palmer	2113076
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/12/2019 01:55	Robert K Palmer	2113077
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/12/2019 12:51	Robert K Palmer	2113078
EPA 8321B	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/13/2019 22:28	Robert K Palmer	2113078
	08/21/2019	08/22/2019 09:00	Fe-Val Siddell	08/24/2019 18:13	Juyoung Kim	2113071
	08/21/2019	08/22/2019 09:00	Fe-Val Siddell	08/24/2019 18:48	Juyoung Kim	2113072
	08/21/2019	08/22/2019 09:00	Fe-Val Siddell	08/24/2019 19:22	Juyoung Kim	2113073
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 14:19	Rebecca Ware	2113071
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 14:33	Rebecca Ware	2113072
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 14:47	Rebecca Ware	2113073
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 15:01	Rebecca Ware	2113074
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 10:39	Rebecca Ware	2113071
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 10:49	Rebecca Ware	2113072
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 11:00	Rebecca Ware	2113073
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 11:11	Rebecca Ware	2113074
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 20:49	Rebecca Ware	2113071
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 21:01	Rebecca Ware	2113072
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 21:12	Rebecca Ware	2113073
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 21:24	Rebecca Ware	2113074
	08/21/2019	08/26/2019 10:00	Hoor Shaik	08/28/2019 23:33	Juyoung Kim	2113074