

Chemical Analysis Report

NE-DIST-2022-03-23-02

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

Event Description: **Suwannee North 2022**

Request ID: **RQ-2022-02-21-29**

Customer: **NE-DIST**

Project ID: **SMP**

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Date Certified: 08-APR-2022 10:51



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: Camp Branch @ SE CR 132

Collection Date/Time: 03/22/2022 11:45

Field ID: 21010047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314042	EPA 8321B	2,4-D	0.0020	U	ug/L	P411506	
		Acesulfame K	0.10	U	ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.10	U	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.10	U	ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	8.0E-04	U	ug/L	P411506	
		Sucralose	0.010	U	ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	8.0E-04	U	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0020	U	ug/L	P411506	RPD
		Fenuron	0.016	U	ug/L	P411506	
		Fluridone	9.5E-04	I	ug/L	P411506	
		Imazapyr	0.0059	I	ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	

Ref. Method and Comment:

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

Sample Location: Rocky CR @ Hogan Rd

Collection Date/Time: 03/22/2022 10:40

Field ID: 21010063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314044	EPA 8321B	2,4-D	0.0020	U	ug/L	P411506	
		Acesulfame K	0.10	U	ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.10	U	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.10	U	ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	8.0E-04	U	ug/L	P411506	
		Sucralose	0.028	I	ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	8.0E-04	U	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0029	I	ug/L	P411506	RPD
		Fenuron	0.024	IV	ug/L	P411506	
		Fluridone	8.0E-04	U	ug/L	P411506	
		Imazapyr	0.073		ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	
2314047	EPA 200.7 Rev. 4.4	Calcium	6.04		mg/L	P411510	
		Iron	870		ug/L	P411510	
		Magnesium	1.58		mg/L	P411510	
		Potassium	1.1	I	mg/L	P411510	
		Sodium	3.4		mg/L	P411510	
		Strontium	9.6		ug/L	P411510	
		Tin	3.0	U	ug/L	P411510	
		Titanium	3.5		ug/L	P411510	
		Vanadium	2.0	U	ug/L	P411510	
		Zinc	5.0	U	ug/L	P411510	
	EPA 200.8 Rev. 5.4	Aluminum	323		ug/L	P411510	

Field ID: 21010063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314047	EPA 200.8 Rev. 5.4	Antimony	0.090	I	ug/L	P411510	
		Arsenic	0.60		ug/L	P411510	
		Barium	6.21		ug/L	P411510	
		Beryllium	0.022	I	ug/L	P411510	
		Boron**	15.9		ug/L	P411510	
		Cadmium	0.028	I	ug/L	P411510	
		Chromium	0.59	I	ug/L	P411680	
		Cobalt	0.281		ug/L	P411510	
		Copper	0.75	I	ug/L	P411510	
		Lead	0.21	I	ug/L	P411510	
		Manganese	16.0		ug/L	P411510	
		Molybdenum	0.15	I	ug/L	P411680	
		Nickel	0.50	U	ug/L	P411680	
		Selenium	0.20	U	ug/L	P411510	
		Silver	0.010	U	ug/L	P411510	
	SM 2340B	Thallium	0.10	U	ug/L	P411510	
		Hardness	21.6		mg/L	P411510	

Ref. Method and Comment:

EPA 8321B: V - due to a fenuron detect in the method blank slightly above the MDL. MS accuracy for bentazon could not be assessed due to a high concentration of parameters in the spiked sample. Results confirmed in re-extraction.

Sample Location: Camp Branch at CR 25A

Collection Date/Time: 03/22/2022 12:05

Field ID: 21010054

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314043	EPA 8321B	2,4-D	0.0020	U	ug/L	P411506	
		Acesulfame K	0.10	U	ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.10	U	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.10	U	ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	8.0E-04	U	ug/L	P411506	
		Sucralose	0.010	U	ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	8.0E-04	U	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0020	U	ug/L	P411506	RPD
		Fenuron	0.016	U	ug/L	P411506	
		Fluridone	8.0E-04	U	ug/L	P411506	
		Imazapyr	0.0045	I	ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	

Ref. Method and Comment:

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

Sample Location: Rocky Creek at CR136

Collection Date/Time: 03/22/2022 12:30

Field ID: 21010016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314045	EPA 8321B	2,4-D	0.0020	U	ug/L	P411506	
		Acesulfame K	0.10	U	ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.10	U	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.10	U	ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	8.6E-04	I	ug/L	P411506	
		Sucralose	0.015	I	ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	8.0E-04	U	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0020	U	ug/L	P411506	RPD
		Fenuron	0.016	U	ug/L	P411506	
		Fluridone	8.0E-04	U	ug/L	P411506	
		Imazapyr	0.050		ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	
2314048	EPA 200.7 Rev. 4.4	Calcium	6.10		mg/L	P411510	
		Iron	630		ug/L	P411510	
		Magnesium	1.47		mg/L	P411510	
		Potassium	1.1	I	mg/L	P411510	
		Sodium	3.4		mg/L	P411510	
		Strontium	9.5		ug/L	P411510	
		Tin	3.0	U	ug/L	P411510	
		Titanium	2.3	I	ug/L	P411510	
		Vanadium	2.0	U	ug/L	P411510	
		Zinc	5.0	U	ug/L	P411510	
		Aluminum	348		ug/L	P411510	
	EPA 200.8 Rev. 5.4						

Field ID: 21010016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314048	EPA 200.8 Rev. 5.4	Antimony	0.080	I	ug/L	P411510	
		Arsenic	0.55		ug/L	P411510	
		Barium	6.45		ug/L	P411510	
		Beryllium	0.019	I	ug/L	P411510	
		Boron**	14.0		ug/L	P411510	
		Cadmium	0.025	I	ug/L	P411510	
		Chromium	0.59	I	ug/L	P411680	
		Cobalt	0.141		ug/L	P411510	
		Copper	0.40	U	ug/L	P411510	
		Lead	0.22	I	ug/L	P411510	
		Manganese	15.6		ug/L	P411510	
		Molybdenum	0.15	U	ug/L	P411680	
		Nickel	0.50	U	ug/L	P411680	
		Selenium	0.20	U	ug/L	P411510	
		Silver	0.010	U	ug/L	P411510	
	SM 2340B	Thallium	0.10	U	ug/L	P411510	
		Hardness	21.3		mg/L	P411510	

Ref. Method and Comment:

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

Sample Location: FB_03222022

Collection Date/Time: 03/22/2022 12:10

Field ID: FB_03222022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314046	EPA 8321B	2,4-D	0.0020	U	ug/L	P411506	
		Acesulfame K	0.10	U	ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.10	U	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.10	U	ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	8.0E-04	U	ug/L	P411506	
		Sucralose	0.010	U	ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	8.0E-04	U	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0020	U	ug/L	P411506	RPD
		Fenuron	0.016	U	ug/L	P411506	
		Fluridone	8.0E-04	U	ug/L	P411506	
		Imazapyr	0.0040	U	ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P411510

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411510

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411680

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L

Reference Method: EPA 8321B

Batch ID: P411448

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P411506

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.022	I	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
Silvex	0.0040	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: P411510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	106		P	85 - 115
Sodium	107		P	85 - 115
Strontium	105		P	85 - 115
Tin	104		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	96.6		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Barium	102		P	85 - 115
Beryllium	100		P	85 - 115
Boron	106		P	85 - 115
Cadmium	100		P	85 - 115
Cobalt	101		P	85 - 115
Copper	99.7		P	85 - 115
Lead	97.9		P	85 - 115
Manganese	98.0		P	85 - 115
Selenium	101		P	85 - 115
Silver	99.8		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	97.9		P	85 - 115
Molybdenum	97.7		P	85 - 115
Nickel	102		P	85 - 115

Reference Method: EPA 8321B

Batch ID: P411448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	110		P	40 - 150
AMPA	109		P	40 - 150
Endothall	126		P	40 - 150
Glufosinate	121		P	40 - 150
Glyphosate	114		P	40 - 150
Sucralose	119		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P411506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	47.7		P	30 - 160
2,4,5-T	40.3		P	30 - 160
Acetaminophen	90.6		P	30 - 150
Acetamiprid	75.6		P	30 - 160
Afidopyropen	45.7		P	30 - 160
Bentazon	77.9		P	30 - 150
Benzovindiflupyr	76.0		P	30 - 160
Carbamazepine	59.9		P	30 - 160
Clothianidin	98.1		P	30 - 160
Dinotefuran	90.4		P	30 - 160
Diuron	64.3		P	30 - 160
Fenuron	122		P	30 - 160
Fluridone	66.4		P	30 - 160
Hydrocodone	92.2		P	30 - 160
Ibuprofen	68.8		P	30 - 160
Imazapyr	95.6		P	30 - 160
Imidacloprid	84.8		P	30 - 160
Linuron	69.1		P	30 - 160
Mandestrobin	62.2		P	30 - 160
MCPP	58.9		P	30 - 160
Naproxen	84.3		P	30 - 160
Primidone	83.3		P	30 - 160
Pyraclostrobin	66.7		P	30 - 160
Silvex	35.4		P	30 - 160
Thiamethoxam	98.5		P	30 - 160
Tolfenpyrad	42.5		P	30 - 160
Triclopyr	43.1		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P411510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314047	Calcium	103		P	80 - 120
2314047	Iron	99.2	103	P/P	80 - 120
2314047	Magnesium	103	108	P/P	80 - 120
2314047	Potassium	96.9	102	P/P	80 - 120
2314047	Sodium	93.3	101	P/P	80 - 120
2314047	Strontium	100	104	P/P	80 - 120
2314047	Tin	101	104	P/P	80 - 120
2314047	Titanium	96.1	99.2	P/P	80 - 120
2314047	Vanadium	94.9	98.6	P/P	80 - 120
2314047	Zinc	100	104	P/P	80 - 120
2314048	Calcium	105		P	80 - 120
2314048	Iron	107		P	80 - 120
2314048	Magnesium	108		P	80 - 120
2314048	Potassium	103		P	80 - 120
2314048	Sodium	102		P	80 - 120
2314048	Strontium	104		P	80 - 120
2314048	Tin	102		P	80 - 120
2314048	Titanium	102		P	80 - 120
2314048	Vanadium	97.5		P	80 - 120
2314048	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P411510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314047	Aluminum	103	104	P/P	80 - 120
2314047	Antimony	100	100	P/P	80 - 120
2314047	Arsenic	101	101	P/P	80 - 120
2314047	Barium	101	102	P/P	80 - 120
2314047	Beryllium	97.5	102	P/P	80 - 120
2314047	Boron	104	103	P/P	80 - 120
2314047	Cadmium	99.6	101	P/P	80 - 120
2314047	Cobalt	99.3	100	P/P	80 - 120
2314047	Copper	97.4	97.6	P/P	80 - 120
2314047	Lead	97.7	98.4	P/P	80 - 120
2314047	Manganese	90.9	93.2	P/P	80 - 120
2314047	Selenium	99.3	98.3	P/P	80 - 120
2314047	Silver	97.8	97.5	P/P	80 - 120
2314047	Thallium	103	104	P/P	80 - 120
2314048	Aluminum	107		P	80 - 120
2314048	Antimony	105		P	80 - 120
2314048	Arsenic	102		P	80 - 120
2314048	Barium	108		P	80 - 120
2314048	Beryllium	99.9		P	80 - 120
2314048	Boron	110		P	80 - 120
2314048	Cadmium	102		P	80 - 120
2314048	Cobalt	103		P	80 - 120
2314048	Copper	103		P	80 - 120
2314048	Lead	100		P	80 - 120
2314048	Manganese	104		P	80 - 120
2314048	Selenium	102		P	80 - 120
2314048	Silver	100		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314048	Thallium	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314860	Chromium	95.9		P	80 - 120
2314860	Molybdenum	98.5		P	80 - 120
2314860	Nickel	93.3		P	80 - 120
2314863	Chromium	98.3	97.7	P/P	80 - 120
2314863	Molybdenum	102	101	P/P	80 - 120
2314863	Nickel	99.8	99.4	P/P	80 - 120

Reference Method: EPA 8321B
Batch ID: P411448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313467	Acesulfame K	143	140	P/P	40 - 150
2313467	AMPA	75.1	102	P/P	40 - 150
2313467	Endothall	83.1	83.7	P/P	40 - 150
2313467	Glufosinate	96.8	119	P/P	40 - 150
2313467	Glyphosate	71.9	95.4	P/P	40 - 150
2313467	Sucralose	112	117	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313467	2,4-D	85.3	78.7	P/P	30 - 160
2313467	2,4,5-T	59.9	69.4	P/P	30 - 160
2313467	Acetaminophen	107	92.2	P/P	30 - 150
2313467	Acetamiprid	104	98.0	P/P	30 - 160
2313467	Afidopyropen	78.9	66.1	P/P	30 - 160
2313467	Benzovindiflupyr	82.4	87.3	P/P	30 - 160
2313467	Carbamazepine	80.3	74.7	P/P	30 - 160
2313467	Clothianidin	128	127	P/P	30 - 160
2313467	Dinotefuran	135	130	P/P	30 - 160
2313467	Diuron	61.7	43.1	P/P	30 - 160
2313467	Fenuron	110	124	P/P	30 - 160
2313467	Fluridone	75.0	67.3	P/P	30 - 160
2313467	Hydrocodone	117	108	P/P	30 - 160
2313467	Ibuprofen	87.8	82.0	P/P	30 - 160
2313467	Imazapyr	138	134	P/P	30 - 160
2313467	Imidacloprid	235	211	F/F	30 - 160
2313467	Linuron	98.1	78.7	P/P	30 - 160
2313467	Mandestrobin	68.4	64.7	P/P	30 - 160
2313467	MCCPP	88.1	77.4	P/P	30 - 160
2313467	Naproxen	75.7	68.0	P/P	30 - 160
2313467	Primidone	125	110	P/P	30 - 160
2313467	Pyraclostrobin	79.8	79.9	P/P	30 - 160
2313467	Silvex	64.0	66.3	P/P	30 - 160
2313467	Thiamethoxam	190	170	F/F	30 - 160

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P411506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313467	Tolfenpyrad	46.0	39.7	P/P	30 - 160
2313467	Triclopyr	62.6	63.9	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314047	Calcium	5.21	Spike	P	0 - 20
2314047	Iron	3.46	Spike	P	0 - 20
2314047	Magnesium	3.79	Spike	P	0 - 20
2314047	Potassium	3.74	Spike	P	0 - 20
2314047	Sodium	4.07	Spike	P	0 - 20
2314047	Strontium	3.77	Spike	P	0 - 20
2314047	Tin	3.59	Spike	P	0 - 20
2314047	Titanium	2.96	Spike	P	0 - 20
2314047	Vanadium	3.82	Spike	P	0 - 20
2314047	Zinc	3.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314047	Aluminum	0.788	Spike	P	0 - 20
2314047	Antimony	0.0934	Spike	P	0 - 20
2314047	Arsenic	0.0465	Spike	P	0 - 20
2314047	Barium	0.856	Spike	P	0 - 20
2314047	Beryllium	4.02	Spike	P	0 - 20
2314047	Boron	0.719	Spike	P	0 - 20
2314047	Cadmium	1.61	Spike	P	0 - 20
2314047	Cobalt	1.19	Spike	P	0 - 20
2314047	Copper	0.235	Spike	P	0 - 20
2314047	Lead	0.724	Spike	P	0 - 20
2314047	Manganese	1.81	Spike	P	0 - 20
2314047	Selenium	1.07	Spike	P	0 - 20
2314047	Silver	0.320	Spike	P	0 - 20
2314047	Thallium	0.695	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314863	Chromium	0.609	Spike	P	0 - 20
2314863	Molybdenum	0.817	Spike	P	0 - 20
2314863	Nickel	0.372	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P411448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313467	Acesulfame K	2.20	Spike	P	0 - 30
2313467	AMPA	26.5	Spike	P	0 - 30
2313467	Endothall	0.772	Spike	P	0 - 30
2313467	Glufosinate	20.8	Spike	P	0 - 30
2313467	Glyphosate	23.0	Spike	P	0 - 30
2313467	Sucralose	4.19	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P411506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313467	2,4-D	7.58	Spike	P	0 - 30
2313467	2,4,5-T	14.6	Spike	P	0 - 30
2313467	Acetaminophen	14.6	Spike	P	0 - 30
2313467	Acetamiprid	5.66	Spike	P	0 - 30
2313467	Afidopyropen	17.7	Spike	P	0 - 30
2313467	Bentazon	6.70	Spike	P	0 - 30
2313467	Benzovindiflupyr	5.82	Spike	P	0 - 30
2313467	Carbamazepine	7.23	Spike	P	0 - 30
2313467	Clothianidin	0.659	Spike	P	0 - 30
2313467	Dinotefuran	3.66	Spike	P	0 - 30
2313467	Diuron	35.5	Spike	F	0 - 30
2313467	Fenuron	12.2	Spike	P	0 - 30
2313467	Fluridone	8.64	Spike	P	0 - 30
2313467	Hydrocodone	8.08	Spike	P	0 - 30
2313467	Ibuprofen	6.90	Spike	P	0 - 30
2313467	Imazapyr	0.694	Spike	P	0 - 30
2313467	Imidacloprid	10.7	Spike	P	0 - 30
2313467	Linuron	21.9	Spike	P	0 - 30
2313467	Mandestrobin	5.53	Spike	P	0 - 30
2313467	MCPP	13.0	Spike	P	0 - 30
2313467	Naproxen	10.7	Spike	P	0 - 30
2313467	Primidone	12.8	Spike	P	0 - 30
2313467	Pyraclostrobin	0.116	Spike	P	0 - 30
2313467	Silvex	3.47	Spike	P	0 - 30
2313467	Thiamethoxam	10.9	Spike	P	0 - 30
2313467	Tolfenpyrad	14.7	Spike	P	0 - 30
2313467	Triclopyr	2.19	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2314042
Field Sample ID: 21010047

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.1	P	30 - 160
EPA 8321B	Diuron-d6	52.7	P	30 - 160
EPA 8321B	Endothall-d6	65.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	95.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.6	P	30 - 160
EPA 8321B	Primidone-d5	130	P	30 - 160
EPA 8321B	Sucralose-d6	80.4	P	30 - 160

Lab Sample ID: 2314043
Field Sample ID: 21010054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	68.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.2	P	30 - 160
EPA 8321B	Diuron-d6	50.6	P	30 - 160
EPA 8321B	Endothall-d6	75.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.7	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	91.2	P	30 - 160

Lab Sample ID: 2314044
Field Sample ID: 21010063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	81.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.8	P	30 - 160
EPA 8321B	Diuron-d6	66.8	P	30 - 160
EPA 8321B	Endothall-d6	86.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.0	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	30 - 160

Lab Sample ID: 2314045
Field Sample ID: 21010016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.3	P	30 - 160
EPA 8321B	Diuron-d6	59.5	P	30 - 160
EPA 8321B	Endothall-d6	90.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.4	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	98.2	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2314046

Field Sample ID: FB_03222022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.6	P	30 - 160
EPA 8321B	Diuron-d6	59.2	P	30 - 160
EPA 8321B	Endothall-d6	81.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	52.7	P	30 - 160
EPA 8321B	Primidone-d5	129	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A111169

Included Lab Sample IDs: 2314042, 2314043, 2314044, 2314045, 2314046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	106	P/P	60 - 160
AMPA	106	104	P/P	60 - 160
Glufosinate	103	106	P/P	60 - 160
Glufosinate	98.6	103	P/P	60 - 160
Glyphosate	101	102	P/P	60 - 160
Glyphosate	102	106	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111171

Included Lab Sample IDs: 2314047, 2314048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Calcium	103	102	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	103	105	P/P	90 - 110
Potassium	105	104	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Strontium	97.6	97.7	P/P	90 - 110
Strontium	97.7	98.2	P/P	90 - 110
Tin	97.7	98.0	P/P	90 - 110
Tin	98.0	97.5	P/P	90 - 110
Titanium	97.1	97.4	P/P	90 - 110
Titanium	97.4	97.6	P/P	90 - 110
Vanadium	97.3	97.3	P/P	90 - 110
Vanadium	97.3	97.1	P/P	90 - 110
Zinc	101	99.0	P/P	90 - 110
Zinc	99.4	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111172

Included Lab Sample IDs: 2314047, 2314048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	101	P/P	90 - 110
Aluminum	101	100	P/P	90 - 110
Antimony	95.8	96.4	P/P	90 - 110
Antimony	96.4	97.2	P/P	90 - 110
Arsenic	101	98.9	P/P	90 - 110
Arsenic	98.9	98.0	P/P	90 - 110
Barium	98.5	99.1	P/P	90 - 110
Barium	99.1	99.3	P/P	90 - 110
Beryllium	99.3	97.6	P/P	90 - 110
Beryllium	99.6	99.3	P/P	90 - 110
Boron	100	100	P/P	90 - 110
Boron	99.7	100	P/P	90 - 110
Cadmium	98.6	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111172

Included Lab Sample IDs: 2314047, 2314048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	98.9	98.4	P/P	90 - 110
Cobalt	100	97.9	P/P	90 - 110
Cobalt	100	100	P/P	90 - 110
Copper	100	98.2	P/P	90 - 110
Copper	102	100	P/P	90 - 110
Lead	96.1	94.4	P/P	90 - 110
Lead	96.4	96.1	P/P	90 - 110
Manganese	95.8	97.5	P/P	90 - 110
Manganese	97.5	98.5	P/P	90 - 110
Selenium	98.0	98.8	P/P	90 - 110
Selenium	98.8	98.0	P/P	90 - 110
Silver	95.7	96.0	P/P	90 - 110
Silver	96.0	95.0	P/P	90 - 110
Thallium	100	99.8	P/P	90 - 110
Thallium	99.8	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111179

Included Lab Sample IDs: 2314042, 2314043, 2314044, 2314045, 2314046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	104	P/P	60 - 160
Acesulfame K	104	96.7	P/P	60 - 160
Endothall	101	113	P/P	60 - 160
Endothall	99.2	101	P/P	60 - 160
Sucralose	108	111	P/P	60 - 160
Sucralose	111	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111189

Included Lab Sample IDs: 2314042, 2314043, 2314044, 2314045, 2314046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.4	91.1	P/P	50 - 150
2,4,5-T	83.8	91.0	P/P	50 - 150
Acetaminophen	118	114	P/P	60 - 160
Acetamiprid	102	108	P/P	50 - 150
Afidopyropen	64.1	86.9	P/P	50 - 150
Bentazon	83.8	82.2	P/P	50 - 160
Benzovindiflupyr	96.2	102	P/P	50 - 160
Carbamazepine	91.4	86.8	P/P	60 - 150
Clothianidin	124	109	P/P	60 - 150
Dinotefuran	116	113	P/P	50 - 150
Diuron	66.0	80.8	P/P	60 - 160
Fenuron	107	103	P/P	60 - 150
Fluridone	87.6	91.5	P/P	60 - 160
Hydrocodone	107	110	P/P	60 - 150
Ibuprofen	119	105	P/P	50 - 160
Imazapyr	104	92.0	P/P	50 - 150
Imidacloprid	100	108	P/P	60 - 150
Linuron	87.0	94.0	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A111189

Included Lab Sample IDs: 2314042, 2314043, 2314044, 2314045, 2314046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	69.8	77.0	P/P	50 - 150
MCPD	80.2	79.8	P/P	50 - 150
Naproxen	93.7	62.5	P/P	50 - 160
Primidone	104	124	P/P	60 - 150
Pyraclostrobin	97.9	95.5	P/P	60 - 150
Silvex	82.0	66.2	P/P	50 - 150
Thiamethoxam	124	103	P/P	50 - 150
Tolfenpyrad	81.3	80.0	P/P	60 - 150
Triclopyr	74.8	79.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111218

Included Lab Sample IDs: 2314047, 2314048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	100	99.2	P/P	90 - 110
Chromium	99.1	100	P/P	90 - 110
Molybdenum	101	100	P/P	90 - 110
Molybdenum	99.6	101	P/P	90 - 110
Nickel	98.5	99.2	P/P	90 - 110
Nickel	99.2	98.9	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 200.7 Rev. 4.4	Calcium	105	103	105				5.21
	Iron	107	99.2	103	107			3.46
	Magnesium	108	103	108	108			3.79
	Potassium	106	96.9	102	103			3.74
	Sodium	107	93.3	101	102			4.07
	Strontium	105	100	104	104			3.77
	Tin	104	101	104	102			3.59
	Titanium	103	96.1	99.2	102			2.96
	Vanadium	96.6	94.9	98.6	97.5			3.82
	Zinc	105	100	104	102			3.58
EPA 200.8 Rev. 5.4	Aluminum	103	103	104	107			0.788
	Antimony	101	100	100	105			0.0934
	Arsenic	100	101	101	102			0.0465
	Barium	102	101	102	108			0.856
	Beryllium	100	97.5	102	99.9			4.02
	Boron	106	104	103	110			0.719
	Cadmium	100	99.6	101	102			1.61
	Chromium	97.9	98.3	97.7	95.9			0.609
	Cobalt	101	99.3	100	103			1.19
	Copper	99.7	97.4	97.6	103			0.235
	Lead	97.9	97.7	98.4	100			0.724
	Manganese	98.0	90.9	93.2	104			1.81
	Molybdenum	97.7	102	101	98.5			0.817
	Nickel	102	99.8	99.4	93.3			0.372
	Selenium	101	99.3	98.3	102			1.07
	Silver	99.8	97.8	97.5	100			0.320
	Thallium	100	103	104	105			0.695
	2,4-D	47.7	85.3	78.7				7.58
	2,4,5-T	40.3	59.9	69.4				14.6
	Acesulfame K	110	143	140				2.20
EPA 8321B	Acetaminophen	90.6	107	92.2				14.6
	Acetamiprid	75.6	104	98.0				5.66
	Afidopyropen	45.7	78.9	66.1				17.7
	AMPA	109	75.1	102				26.5
	Bentazon	77.9						6.70
	Benzovindiflupyr	76.0	82.4	87.3				5.82
	Carbamazepine	59.9	80.3	74.7				7.23
	Clothianidin	98.1	128	127				0.659
	Dinotefuran	90.4	135	130				3.66
	Diuron	64.3	61.7	43.1				35.5
	Endothall	126	83.1	83.7				0.772
	Fenuron	122	110	124				12.2
	Fluridone	66.4	75.0	67.3				8.64
	Glufosinate	121	96.8	119				20.8
	Glyphosate	114	71.9	95.4				23.0
	Hydrocodone	92.2	117	108				8.08
	Ibuprofen	68.8	87.8	82.0				6.90
	Imazapyr	95.6	138	134				0.694
	Imidacloprid	84.8	235	211				10.7
	Linuron	69.1	98.1	78.7				21.9
	Mandestrobin	62.2	68.4	64.7				5.53
	MCPP	58.9	88.1	77.4				13.0
	Naproxen	84.3	75.7	68.0				10.7
	Primidone	83.3	125	110				12.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
EPA 8321B	Pyraclostrobin	66.7	79.8	79.9		0.116
	Silvex	35.4	64.0	66.3		3.47
	Sucralose	119	112	117		4.19
	Thiamethoxam	98.5	190	170		10.9
	Tolfenpyrad	42.5	46.0	39.7		14.7
	Triclopyr	43.1	62.6	63.9		2.19

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2314047, 2314048
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2314047, 2314048
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2314042, 2314043, 2314044, 2314045, 2314046
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2314047, 2314048

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	03/23/2022	03/24/2022 10:37	Megan Whitefoot	03/25/2022 18:48	Josef B Mick	2314047
	03/23/2022	03/24/2022 10:37	Megan Whitefoot	03/25/2022 19:51	Josef B Mick	2314048
EPA 200.8 Rev. 5.4	03/23/2022	03/24/2022 10:37	Megan Whitefoot	03/25/2022 14:21	Alexander Thompson	2314047
	03/23/2022	03/24/2022 10:37	Megan Whitefoot	03/25/2022 16:36	Alexander Thompson	2314048
	03/23/2022	03/29/2022 10:33	Megan Whitefoot	03/29/2022 19:50	Emily M Philpot	2314047
	03/23/2022	03/29/2022 10:33	Megan Whitefoot	03/29/2022 20:48	Emily M Philpot	2314048
	03/23/2022	03/24/2022 09:30	June Rhew	03/27/2022 00:49	Juyoung Kim	2314042
EPA 8321B	03/23/2022	03/24/2022 09:30	June Rhew	03/27/2022 01:24	Juyoung Kim	2314043
	03/23/2022	03/24/2022 09:30	June Rhew	03/27/2022 01:59	Juyoung Kim	2314044
	03/23/2022	03/24/2022 09:30	June Rhew	03/27/2022 02:33	Juyoung Kim	2314045
	03/23/2022	03/24/2022 09:30	June Rhew	03/27/2022 03:08	Juyoung Kim	2314046
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 20:26	Manjita Shrestha	2314042
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 20:39	Manjita Shrestha	2314043
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 21:05	Manjita Shrestha	2314044
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 21:17	Manjita Shrestha	2314045
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 21:30	Manjita Shrestha	2314046
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 06:08	Manjita Shrestha	2314042
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 06:23	Manjita Shrestha	2314043
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 06:52	Manjita Shrestha	2314044
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 07:07	Manjita Shrestha	2314045
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 07:22	Manjita Shrestha	2314046
	03/23/2022			03/25/2022 18:48	Josef B Mick	2314047
	03/23/2022			03/25/2022 19:51	Josef B Mick	2314048
SM 2340B						