

Chemical Analysis Report

SO-DIST-2023-01-11-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2023 SMP: Later Gator**
Request ID: **RQ-2023-01-09-44**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
2295 Victoria Ave. Suite 314
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Date Certified: 31-JAN-2023 09:42



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: Telegraph Swamp South Site

Collection Date/Time: 01/10/2023 10:25

Field ID: G3SD0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2379868	EPA 8321B	2,4-D	0.0020	U	ug/L	P424452	
		Acesulfame K	0.10	U	ug/L	P424336	
		2,4,5-T	0.0040	U	ug/L	P424452	
		AMPA	0.17	I	ug/L	P424336	
		Sucralose	0.094		ug/L	P424336	
		Acetaminophen	0.0080	U	ug/L	P424452	
		Acetamiprid	0.0020	U	ug/L	P424452	
		Endothall	0.25	U	ug/L	P424336	
		Glufosinate	0.10	U	ug/L	P424336	
		Glyphosate	0.22	I	ug/L	P424336	
		Afidopyropen	0.0020	U	ug/L	P424452	
		Bentazon	0.0028	I	ug/L	P424452	
		Benzovindiflupyr	0.0020	U	ug/L	P424452	
		Carbamazepine	8.0E-04	U	ug/L	P424452	
		Clothianidin	0.0020	U	ug/L	P424452	
		Dinotefuran	0.0030	I	ug/L	P424452	
		Diuron	0.0020	U	ug/L	P424452	
		Fenuron	0.032	U	ug/L	P424452	
		Fluridone	8.0E-04	U	ug/L	P424452	
		Imazapyr	0.33		ug/L	P424452	
		Hydrocodone	0.0020	U	ug/L	P424452	
		Ibuprofen	0.080	U	ug/L	P424452	
		Imidacloprid	0.0020	U	ug/L	P424452	MS
		Linuron	0.0040	U	ug/L	P424452	
		Mandestrobin	0.0020	U	ug/L	P424452	
		MCPP	0.0020	U	ug/L	P424452	
		Naproxen	0.0080	U	ug/L	P424452	
		Primidone	0.0040	U	ug/L	P424452	
		Pyraclostrobin	0.0020	U	ug/L	P424452	
		Silvex	0.0040	U	ug/L	P424452	
		Thiamethoxam	0.0020	U	ug/L	P424452	
		Tolfenpyrad	0.0020	U	ug/L	P424452	
		Triclopyr	0.0040	U	ug/L	P424452	
2379880	EPA 200.7 Rev. 4.4	Calcium	55.0		mg/L	P424492	
		Cobalt	1.0	U	ug/L	P424492	
		Iron	410		ug/L	P424492	
		Magnesium	10.4		mg/L	P424492	
		Potassium	2.4		mg/L	P424492	
		Sodium	58.9		mg/L	P424492	
		Strontium	3.53E+03		ug/L	P424492	
		Tin	3.0	U	ug/L	P424492	
		Titanium	2.7	I	ug/L	P424492	
		Vanadium	2.0	U	ug/L	P424492	
		Zinc	5.0	U	ug/L	P424492	

Field ID: G3SD0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2379880	EPA 200.8 Rev. 5.4	Aluminum	109		ug/L	P424492	
		Antimony	0.050	U	ug/L	P424492	
		Arsenic	0.61		ug/L	P424492	
		Barium	21.0		ug/L	P424492	
		Beryllium	0.010	U	ug/L	P424492	
		Boron	46.4		ug/L	P424492	
		Cadmium	0.020	U	ug/L	P424492	
		Chromium	1.1	I	ug/L	P424492	
		Copper	0.59	I	ug/L	P424492	
		Lead	0.20	U	ug/L	P424492	
		Manganese	22.9		ug/L	P424492	
		Molybdenum	0.23	I	ug/L	P424492	
		Nickel	0.51	I	ug/L	P424492	
		Selenium	0.20	U	ug/L	P424492	
		Silver	0.010	U	ug/L	P424492	
	SM 2340 B-2011	Thallium	0.10	U	ug/L	P424492	
		Hardness	180		mg/L	P424492	

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

Sample Location: Myrtle Slough @ SR 31

Collection Date/Time: 01/10/2023 11:10

Field ID: G3SD0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2379870	EPA 8321B	2,4-D	0.0020	U	ug/L	P424452	
		Acesulfame K	0.10	U	ug/L	P424336	
		2,4,5-T	0.0040	U	ug/L	P424452	
		AMPA	1.3		ug/L	P424336	
		Sucralose	0.010	U	ug/L	P424336	
		Acetaminophen	0.0080	U	ug/L	P424452	
		Acetamiprid	0.0020	U	ug/L	P424452	
		Endothall	0.25	U	ug/L	P424336	
		Glufosinate	0.10	U	ug/L	P424336	
		Glyphosate	3.6		ug/L	P424336	
		Afidopyropen	0.0020	U	ug/L	P424452	
		Bentazon	0.043		ug/L	P424452	
		Benzovindiflupyr	0.0020	U	ug/L	P424452	
		Carbamazepine	8.0E-04	U	ug/L	P424452	
		Clothianidin	0.018		ug/L	P424452	
		Dinotefuran	0.0020	U	ug/L	P424452	
		Diuron	0.0028	I	ug/L	P424452	
		Fenuron	0.032	U	ug/L	P424452	
		Fluridone	0.038		ug/L	P424452	
		Imazapyr	0.0040	U	ug/L	P424452	
		Hydrocodone	0.0020	U	ug/L	P424452	
		Ibuprofen	0.080	U	ug/L	P424452	
		Imidacloprid	0.12		ug/L	P424452	MS
		Linuron	0.0040	U	ug/L	P424452	
		Mandestrobin	0.0020	U	ug/L	P424452	
		MCPP	0.0020	U	ug/L	P424452	
		Naproxen	0.0080	U	ug/L	P424452	
		Primidone	0.0040	U	ug/L	P424452	
		Pyraclostrobin	0.0020	U	ug/L	P424452	
		Silvex	0.0040	U	ug/L	P424452	
		Thiamethoxam	0.0062	I	ug/L	P424452	
		Tolfenpyrad	0.0020	U	ug/L	P424452	
		Triclopyr	0.0040	U	ug/L	P424452	

Ref. Method and Comment:

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

Sample Location: Alligator North @ Jones Loop Rd.

Collection Date/Time: 01/10/2023 12:10

Field ID: G2SD0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2379869	EPA 8321B	2,4-D	0.0020	U	ug/L	P424452	
		Acesulfame K	0.10	I	ug/L	P424336	
		2,4,5-T	0.0040	U	ug/L	P424452	
		AMPA	0.10	U	ug/L	P424336	
		Sucralose	0.27		ug/L	P424336	
		Acetaminophen	0.0080	U	ug/L	P424452	
		Acetamiprid	0.0020	U	ug/L	P424452	
		Endothall	0.25	U	ug/L	P424336	
		Glufosinate	0.10	U	ug/L	P424336	
		Glyphosate	0.10	U	ug/L	P424336	
		Afidopyropen	0.0020	U	ug/L	P424452	
		Bentazon	9.4E-04	I	ug/L	P424452	
		Benzovindiflupyr	0.0020	U	ug/L	P424452	
		Carbamazepine	0.0014	I	ug/L	P424452	
		Clothianidin	0.0020	U	ug/L	P424452	
		Dinotefuran	0.0020	U	ug/L	P424452	
		Diuron	0.0020	U	ug/L	P424452	
		Fenuron	0.032	U	ug/L	P424452	
		Fluridone	8.0E-04	U	ug/L	P424452	
		Imazapyr	0.056		ug/L	P424452	
		Hydrocodone	0.0020	U	ug/L	P424452	
		Ibuprofen	0.080	U	ug/L	P424452	
		Imidacloprid	0.0020	U	ug/L	P424452	MS
		Linuron	0.0040	U	ug/L	P424452	
		Mandestrobin	0.0020	U	ug/L	P424452	
		MCPP	0.0020	U	ug/L	P424452	
		Naproxen	0.0080	U	ug/L	P424452	
		Primidone	0.0040	U	ug/L	P424452	
		Pyraclostrobin	0.0020	U	ug/L	P424452	
		Silvex	0.0040	U	ug/L	P424452	
		Thiamethoxam	0.0020	U	ug/L	P424452	
		Tolfenpyrad	0.0020	U	ug/L	P424452	
		Triclopyr	0.0040	U	ug/L	P424452	
2379881	EPA 200.7 Rev. 4.4	Calcium	110		mg/L	P424492	
		Cobalt	1.0	U	ug/L	P424492	
		Iron	330		ug/L	P424492	
		Magnesium	22.4		mg/L	P424492	
		Potassium	3.3		mg/L	P424492	
		Sodium	111		mg/L	P424492	
		Strontium	6.57E+03		ug/L	P424492	
		Tin	3.0	U	ug/L	P424492	
		Titanium	1.0	I	ug/L	P424492	
		Vanadium	2.0	U	ug/L	P424492	
		Zinc	5.0	U	ug/L	P424492	

Field ID: G2SD0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2379881	EPA 200.8 Rev. 5.4	Aluminum	6.2	I	ug/L	P424492	
		Antimony	0.050	U	ug/L	P424492	
		Arsenic	0.62		ug/L	P424492	
		Barium	33.5		ug/L	P424492	
		Beryllium	0.010	U	ug/L	P424492	
		Boron	61.1		ug/L	P424492	
		Cadmium	0.020	U	ug/L	P424492	
		Chromium	0.40	U	ug/L	P424492	
		Copper	0.40	U	ug/L	P424492	
		Lead	0.20	U	ug/L	P424492	
		Manganese	10.7		ug/L	P424492	
		Molybdenum	3.95		ug/L	P424492	
		Nickel	0.50	U	ug/L	P424492	
		Selenium	0.20	U	ug/L	P424492	
		Silver	0.010	U	ug/L	P424492	
		Thallium	0.10	U	ug/L	P424492	
	SM 2340 B-2011	Hardness	367		mg/L	P424492	

Ref. Method and Comment:
EPA 8321B: MS accuracy for some analytes 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: P424492

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Cobalt	1.0	U	ug/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: P424492

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
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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: P424336

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: P424452

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P424452

Component	Result	Code	Units
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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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: P424492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Cobalt	98.7		P	85 - 115
Iron	101		P	85 - 115
Magnesium	98.7		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	99.3		P	85 - 115
Strontium	99.0		P	85 - 115
Tin	95.9		P	85 - 115
Titanium	97.7		P	85 - 115
Vanadium	94.3		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	103		P	85 - 115
Barium	105		P	85 - 115
Beryllium	92.2		P	85 - 115
Boron	106		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	95.3		P	85 - 115
Copper	97.2		P	85 - 115
Lead	98.2		P	85 - 115
Manganese	98.2		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	99.4		P	85 - 115
Selenium	95.3		P	85 - 115
Silver	102		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 8321B

Batch ID: P424336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	107		P	40 - 150
Endothall	123		P	40 - 150
Glufosinate	126		P	40 - 150
Glyphosate	105		P	40 - 150
Sucralose	107		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P424452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
2,4,5-T	84.4		P	40 - 150
Acetaminophen	88.7		P	30 - 150
Acetamiprid	98.6		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P424452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Afidopyropen	73.3		P	30 - 150
Bentazon	85.6		P	30 - 150
Benzovindiflupyr	92.3		P	40 - 150
Carbamazepine	83.0		P	40 - 150
Clothianidin	98.6		P	40 - 150
Dinotefuran	98.0		P	40 - 150
Diuron	89.9		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	98.1		P	40 - 150
Hydrocodone	94.3		P	40 - 150
Ibuprofen	108		P	40 - 150
Imazapyr	93.9		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	74.5		P	40 - 150
Mandestrobin	107		P	40 - 150
MCPP	105		P	40 - 150
Naproxen	86.8		P	40 - 150
Primidone	95.2		P	40 - 150
Pyraclostrobin	70.5		P	40 - 150
Silvex	82.8		P	40 - 150
Thiamethoxam	96.9		P	40 - 150
Tolfenpyrad	33.5		P	30 - 150
Triclopyr	84.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P424492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2379701	Calcium	97.2		P	80 - 120
2379701	Cobalt	101	100	P/P	80 - 120
2379701	Iron	101	100	P/P	80 - 120
2379701	Magnesium	97.0		P	80 - 120
2379701	Potassium	95.4		P	80 - 120
2379701	Sodium	96.9		P	80 - 120
2379701	Strontium	98.8	96.6	P/P	80 - 120
2379701	Tin	96.5	96.3	P/P	80 - 120
2379701	Titanium	100	99.2	P/P	80 - 120
2379701	Vanadium	101	99.9	P/P	80 - 120
2379701	Zinc	102	101	P/P	80 - 120
2380052	Calcium	99.6		P	80 - 120
2380052	Cobalt	100		P	80 - 120
2380052	Iron	101		P	80 - 120
2380052	Magnesium	98.5		P	80 - 120
2380052	Potassium	97.2		P	80 - 120
2380052	Sodium	99.3		P	80 - 120
2380052	Strontium	98.5		P	80 - 120
2380052	Tin	95.8		P	80 - 120
2380052	Titanium	96.4		P	80 - 120
2380052	Vanadium	99.9		P	80 - 120
2380052	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2379701	Aluminum	97.5	96.8	P/P	80 - 120
2379701	Antimony	107	107	P/P	80 - 120
2379701	Arsenic	106	106	P/P	80 - 120
2379701	Barium	104	104	P/P	80 - 120
2379701	Beryllium	94.4	95.3	P/P	80 - 120
2379701	Boron	96.6	96.6	P/P	80 - 120
2379701	Cadmium	107	105	P/P	80 - 120
2379701	Chromium	96.5	96.2	P/P	80 - 120
2379701	Copper	96.1	96.2	P/P	80 - 120
2379701	Lead	98.7	97.0	P/P	80 - 120
2379701	Manganese	98.4	97.7	P/P	80 - 120
2379701	Molybdenum	103	102	P/P	80 - 120
2379701	Nickel	98.6	98.6	P/P	80 - 120
2379701	Selenium	95.1	95.7	P/P	80 - 120
2379701	Silver	99.9	98.7	P/P	80 - 120
2379701	Thallium	106	104	P/P	80 - 120
2380052	Aluminum	91.4		P	80 - 120
2380052	Antimony	107		P	80 - 120
2380052	Arsenic	106		P	80 - 120
2380052	Barium	104		P	80 - 120
2380052	Beryllium	95.8		P	80 - 120
2380052	Boron	101		P	80 - 120
2380052	Cadmium	108		P	80 - 120
2380052	Chromium	97.0		P	80 - 120
2380052	Copper	96.7		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380052	Lead	98.3		P	80 - 120
2380052	Manganese	96.4		P	80 - 120
2380052	Molybdenum	103		P	80 - 120
2380052	Nickel	96.2		P	80 - 120
2380052	Selenium	97.9		P	80 - 120
2380052	Silver	99.7		P	80 - 120
2380052	Thallium	104		P	80 - 120

Reference Method: EPA 8321B
Batch ID: P424336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2378951	Acesulfame K	96.0	99.2	P/P	40 - 150
2378951	AMPA	106	113	P/P	40 - 150
2378951	Endothall	128	127	P/P	40 - 150
2378951	Glufosinate	108	122	P/P	40 - 150
2378951	Glyphosate	104	105	P/P	40 - 150
2378951	Sucralose	97.8	91.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P424452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2378952	2,4-D	91.6	106	P/P	40 - 150
2378952	2,4,5-T	100	99.6	P/P	40 - 150
2378952	Acetaminophen	97.6	94.5	P/P	30 - 150
2378952	Acetamiprid	77.5	88.5	P/P	40 - 150
2378952	Afidopyropen	78.2	95.4	P/P	30 - 150
2378952	Benzovindiflupyr	90.0	92.5	P/P	40 - 150
2378952	Carbamazepine	61.0	63.5	P/P	40 - 150
2378952	Clothianidin	97.3	100	P/P	40 - 150
2378952	Dinotefuran	91.6	93.7	P/P	40 - 150
2378952	Diuron	58.1	58.8	P/P	40 - 150
2378952	Fenuron	72.6	75.5	P/P	40 - 150
2378952	Fluridone	91.7	83.9	P/P	40 - 150
2378952	Hydrocodone	81.4	82.5	P/P	40 - 150
2378952	Ibuprofen	81.5	89.5	P/P	40 - 150
2378952	Imidacloprid	145	154	P/F	40 - 150
2378952	Linuron	62.0	59.6	P/P	40 - 150
2378952	Mandestrobin	94.9	97.3	P/P	40 - 150
2378952	MCP	117	114	P/P	40 - 150
2378952	Naproxen	82.3	79.4	P/P	40 - 150
2378952	Primidone	99.6	98.4	P/P	40 - 150
2378952	Pyraclostrobin	75.4	79.6	P/P	40 - 150
2378952	Silvex	78.3	84.8	P/P	40 - 150
2378952	Thiamethoxam	96.3	97.3	P/P	40 - 150
2378952	Tolfenpyrad	49.6	49.0	P/P	30 - 150
2378952	Triclopyr	101	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2379701	Calcium	2.58	Spike	P	0 - 20
2379701	Cobalt	0.764	Spike	P	0 - 20
2379701	Iron	0.284	Spike	P	0 - 20
2379701	Magnesium	0.254	Spike	P	0 - 20
2379701	Potassium	0.126	Spike	P	0 - 20
2379701	Sodium	1.58	Spike	P	0 - 20
2379701	Strontium	1.60	Spike	P	0 - 20
2379701	Tin	0.170	Spike	P	0 - 20
2379701	Titanium	0.847	Spike	P	0 - 20
2379701	Vanadium	0.920	Spike	P	0 - 20
2379701	Zinc	0.800	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2379701	Aluminum	0.594	Spike	P	0 - 20
2379701	Antimony	0.508	Spike	P	0 - 20
2379701	Arsenic	0.523	Spike	P	0 - 20
2379701	Barium	0.232	Spike	P	0 - 20
2379701	Beryllium	0.932	Spike	P	0 - 20
2379701	Boron	0.0211	Spike	P	0 - 20
2379701	Cadmium	1.92	Spike	P	0 - 20
2379701	Chromium	0.262	Spike	P	0 - 20
2379701	Copper	0.0587	Spike	P	0 - 20
2379701	Lead	1.78	Spike	P	0 - 20
2379701	Manganese	0.566	Spike	P	0 - 20
2379701	Molybdenum	0.847	Spike	P	0 - 20
2379701	Nickel	0.0834	Spike	P	0 - 20
2379701	Selenium	0.655	Spike	P	0 - 20
2379701	Silver	1.18	Spike	P	0 - 20
2379701	Thallium	1.81	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P424336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2378951	Acesulfame K	3.32	Spike	P	0 - 30
2378951	AMPA	6.64	Spike	P	0 - 30
2378951	Endothall	1.07	Spike	P	0 - 30
2378951	Glufosinate	12.0	Spike	P	0 - 30
2378951	Glyphosate	1.09	Spike	P	0 - 30
2378951	Sucralose	6.14	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P424452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P424452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2378952	2,4-D	12.9	Spike	P	0 - 30
2378952	2,4,5-T	0.720	Spike	P	0 - 30
2378952	Acetaminophen	3.23	Spike	P	0 - 30
2378952	Acetamiprid	13.2	Spike	P	0 - 30
2378952	Afidopyropen	19.8	Spike	P	0 - 30
2378952	Bentazon	12.3	Spike	P	0 - 30
2378952	Benzovindiflupyr	2.71	Spike	P	0 - 30
2378952	Carbamazepine	3.99	Spike	P	0 - 30
2378952	Clothianidin	2.87	Spike	P	0 - 30
2378952	Dinotefuran	2.29	Spike	P	0 - 30
2378952	Diuron	1.12	Spike	P	0 - 30
2378952	Fenuron	4.03	Spike	P	0 - 30
2378952	Fluridone	5.90	Spike	P	0 - 30
2378952	Hydrocodone	1.27	Spike	P	0 - 30
2378952	Ibuprofen	9.38	Spike	P	0 - 30
2378952	Imazapyr	0.581	Spike	P	0 - 30
2378952	Imidacloprid	4.99	Spike	P	0 - 30
2378952	Linuron	3.99	Spike	P	0 - 30
2378952	Mandestrobin	2.50	Spike	P	0 - 30
2378952	MCPP	3.17	Spike	P	0 - 30
2378952	Naproxen	3.55	Spike	P	0 - 30
2378952	Primidone	1.13	Spike	P	0 - 30
2378952	Pyraclostrobin	5.42	Spike	P	0 - 30
2378952	Silvex	7.89	Spike	P	0 - 30
2378952	Thiamethoxam	0.952	Spike	P	0 - 30
2378952	Tolfenpyrad	1.33	Spike	P	0 - 30
2378952	Triclopyr	7.52	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2379868
Field Sample ID: G3SD0100

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.9	P	30 - 160
EPA 8321B	Diuron-d6	40.0	P	30 - 160
EPA 8321B	Endothall-d6	132	P	30 - 160
EPA 8321B	Endothall-d6	132	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.7	P	30 - 160
EPA 8321B	Primidone-d5	79.3	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	43.0	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	43.0	P	30 - 160

Lab Sample ID: 2379869
Field Sample ID: G2SD0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.6	P	30 - 160
EPA 8321B	Diuron-d6	55.4	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	71.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	71.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.1	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	47.8	P	30 - 160
EPA 8321B	Sucralose-d6	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	47.8	P	30 - 160

Lab Sample ID: 2379870
Field Sample ID: G3SD0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.6	P	30 - 160
EPA 8321B	Diuron-d6	45.3	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.6	P	30 - 160
EPA 8321B	Primidone-d5	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	43.4	P	30 - 160
EPA 8321B	Sucralose-d6	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	43.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116897

Included Lab Sample IDs: 2379868, 2379869, 2379870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	119	P/P	60 - 160
Endothall	107	107	P/P	60 - 160
Glufosinate	100	111	P/P	60 - 160
Glyphosate	99.0	101	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116918

Included Lab Sample IDs: 2379868, 2379869, 2379870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	112	P/P	50 - 150
2,4,5-T	106	122	P/P	50 - 150
Acetaminophen	113	110	P/P	60 - 160
Acetamiprid	141	125	P/P	50 - 150
Afidopyropen	140	118	P/P	50 - 150
Bentazon	112	102	P/P	50 - 160
Benzovindiflupyr	129	134	P/P	50 - 150
Carbamazepine	126	118	P/P	60 - 150
Clothianidin	117	116	P/P	60 - 150
Dinotefuran	123	113	P/P	50 - 150
Diuron	142	141	P/P	60 - 160
Fenuron	115	115	P/P	60 - 150
Fluridone	122	122	P/P	60 - 160
Hydrocodone	121	120	P/P	60 - 150
Ibuprofen	119	106	P/P	50 - 160
Imazapyr	110	112	P/P	50 - 150
Imidacloprid	120	120	P/P	60 - 150
Linuron	112	91.0	P/P	60 - 150
Mandestrobin	132	136	P/P	50 - 150
MCPP	116	112	P/P	50 - 150
Naproxen	87.9	99.0	P/P	50 - 160
Primidone	109	98.5	P/P	60 - 150
Pyraclostrobin	118	105	P/P	60 - 150
Silvex	118	101	P/P	50 - 150
Thiamethoxam	121	124	P/P	50 - 150
Tolfenpyrad	110	105	P/P	60 - 150
Triclopyr	113	110	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A116950

Included Lab Sample IDs: 2379868, 2379869, 2379870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	87.6	87.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116951

Included Lab Sample IDs: 2379868, 2379869, 2379870

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.9	87.4	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117038

Included Lab Sample IDs: 2379880, 2379881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.8	98.4	P/P	90 - 110
Cobalt	98.2	104	P/P	90 - 110
Iron	99.4	97.9	P/P	90 - 110
Magnesium	99.4	97.8	P/P	90 - 110
Potassium	100	99.2	P/P	90 - 110
Sodium	100	99.9	P/P	90 - 110
Strontium	97.6	106	P/P	90 - 110
Tin	96.3	102	P/P	90 - 110
Titanium	96.7	102	P/P	90 - 110
Vanadium	96.2	102	P/P	90 - 110
Zinc	97.8	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117050

Included Lab Sample IDs: 2379880, 2379881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.5	99.3	P/P	90 - 110
Antimony	106	107	P/P	90 - 110
Arsenic	103	105	P/P	90 - 110
Barium	102	104	P/P	90 - 110
Beryllium	98.2	100	P/P	90 - 110
Boron	94.5	97.0	P/P	90 - 110
Cadmium	105	105	P/P	90 - 110
Chromium	95.6	95.2	P/P	90 - 110
Copper	97.9	98.0	P/P	90 - 110
Lead	95.7	96.3	P/P	90 - 110
Manganese	97.8	97.7	P/P	90 - 110
Molybdenum	99.8	101	P/P	90 - 110
Nickel	97.7	98.5	P/P	90 - 110
Selenium	103	105	P/P	90 - 110
Silver	101	102	P/P	90 - 110
Thallium	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117079

Included Lab Sample IDs: 2379881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	98.1	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	100	97.2	99.6			2.58
	Cobalt	98.7	101	100	100		0.764
	Iron	101	101	100	101		0.284
	Magnesium	98.7	97.0	98.5			0.254
	Potassium	98.8	95.4	97.2			0.126
	Sodium	99.3	96.9	99.3			1.58
	Strontium	99.0	98.8	96.6	98.5		1.60
	Tin	95.9	96.5	96.3	95.8		0.170
	Titanium	97.7	100	99.2	96.4		0.847
	Vanadium	94.3	101	99.9	99.9		0.920
	Zinc	98.5	102	101	102		0.800
EPA 200.8 Rev. 5.4	Aluminum	101	97.5	96.8	91.4		0.594
	Antimony	107	107	107	107		0.508
	Arsenic	103	106	106	106		0.523
	Barium	105	104	104	104		0.232
	Beryllium	92.2	94.4	95.3	95.8		0.932
	Boron	106	96.6	96.6	101		0.0211
	Cadmium	106	107	105	108		1.92
	Chromium	95.3	96.5	96.2	97.0		0.262
	Copper	97.2	96.1	96.2	96.7		0.0587
	Lead	98.2	98.7	97.0	98.3		1.78
	Manganese	98.2	98.4	97.7	96.4		0.566
	Molybdenum	100	103	102	103		0.847
	Nickel	99.4	98.6	98.6	96.2		0.0834
	Selenium	95.3	95.1	95.7	97.9		0.655
	Silver	102	99.9	98.7	99.7		1.18
	Thallium	101	106	104	104		1.81
EPA 8321B	2,4-D	105	91.6	106			12.9
	2,4,5-T	84.4	100	99.6			0.720
	Acesulfame K	103	96.0	99.2			3.32
	Acetaminophen	88.7	97.6	94.5			3.23
	Acetamiprid	98.6	77.5	88.5			13.2
	Afidopyropen	73.3	78.2	95.4			19.8
	AMPA	107	106	113			6.64
	Bentazon	85.6					12.3
	Benzovindiflupyr	92.3	90.0	92.5			2.71
	Carbamazepine	83.0	61.0	63.5			3.99
	Clothianidin	98.6	97.3	100			2.87
	Dinotefuran	98.0	91.6	93.7			2.29
	Diuron	89.9	58.1	58.8			1.12
	Endothall	123	128	127			1.07
	Fenuron	108	72.6	75.5			4.03
	Fluridone	98.1	91.7	83.9			5.90
	Glufosinate	126	108	122			12.0
	Glyphosate	105	104	105			1.09
	Hydrocodone	94.3	81.4	82.5			1.27
	Ibuprofen	108	81.5	89.5			9.38
	Imazapyr	93.9					0.581
	Imidacloprid	103	145	154			4.99
	Linuron	74.5	62.0	59.6			3.99
	Mandestrobin	107	94.9	97.3			2.50
	MCPD	105	117	114			3.17
	Naproxen	86.8	82.3	79.4			3.55
	Primidone	95.2	99.6	98.4			1.13

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Pyraclostrobin	70.5	75.4	79.6		5.42
	Silvex	82.8	78.3	84.8		7.89
	Sucralose	107	97.8	91.6		6.14
	Thiamethoxam	96.9	96.3	97.3		0.952
	Tolfenpyrad	33.5	49.6	49.0		1.33
	Triclopyr	84.6	101	109		7.52

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2379880, 2379881
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2379880, 2379881
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2379868, 2379869, 2379870
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2379868, 2379869, 2379870
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2379880, 2379881

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	01/11/2023	01/12/2023 12:15	George D Taylor	01/23/2023 20:54	McKinley C Carter	2379880
	01/11/2023	01/12/2023 12:15	George D Taylor	01/23/2023 21:01	McKinley C Carter	2379881
EPA 200.8 Rev. 5.4	01/11/2023	01/12/2023 12:15	George D Taylor	01/23/2023 22:28	Megan Whitefoot	2379880
	01/11/2023	01/12/2023 12:15	George D Taylor	01/23/2023 22:37	Megan Whitefoot	2379881
	01/11/2023	01/12/2023 12:15	George D Taylor	01/24/2023 23:41	Megan Whitefoot	2379881
	01/11/2023	01/12/2023 09:30	June Rhew	01/12/2023 17:07	Manjita Shrestha	2379868
EPA 8321B	01/11/2023	01/12/2023 09:30	June Rhew	01/12/2023 17:20	Manjita Shrestha	2379869
	01/11/2023	01/12/2023 09:30	June Rhew	01/12/2023 17:33	Manjita Shrestha	2379870
	01/11/2023	01/12/2023 09:30	June Rhew	01/13/2023 05:36	Manjita Shrestha	2379868
	01/11/2023	01/12/2023 09:30	June Rhew	01/13/2023 05:51	Manjita Shrestha	2379869
	01/11/2023	01/12/2023 09:30	June Rhew	01/13/2023 06:06	Manjita Shrestha	2379870
	01/11/2023	01/12/2023 09:30	Manjita Shrestha	01/17/2023 15:57	Manjita Shrestha	2379868
	01/11/2023	01/12/2023 09:30	Manjita Shrestha	01/17/2023 16:12	Manjita Shrestha	2379869
	01/11/2023	01/12/2023 09:30	Manjita Shrestha	01/17/2023 16:27	Manjita Shrestha	2379870
	01/11/2023	01/13/2023 09:00	June Rhew	01/13/2023 22:32	Juyoung Kim	2379868
	01/11/2023	01/13/2023 09:00	June Rhew	01/13/2023 22:51	Juyoung Kim	2379869
	01/11/2023	01/13/2023 09:00	June Rhew	01/13/2023 23:10	Juyoung Kim	2379870
	01/11/2023			01/23/2023 20:54	McKinley C Carter	2379880
SM 2340 B-2011	01/11/2023			01/23/2023 21:01	McKinley C Carter	2379881