

Chemical Analysis Report

NW-DIST-2023-07-06-01

Florida DEP Laboratory
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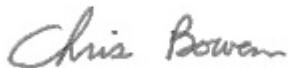
Event Description: **Laurel Hill West**
Request ID: **RQ-2023-07-03-16**
Customer: **NW-DIST**
Project ID: **SMP**

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 24-JUL-2023 10:58



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: BAGGETT CREEK UPSTREAM OF HWY 90

Collection Date/Time: 07/05/2023 13:25

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421580	EPA 8270E	Aldrin	0.77	U	ng/L	P432065	
		Alpha-BHC	0.12	U	ng/L	P432065	
		Alpha-Chlordane	0.24	U	ng/L	P432065	
		PCB-1016	2.4	U	ng/L	P432065	
		Beta-BHC	0.12	U	ng/L	P432065	RPD
		PCB-1221	2.4	U	ng/L	P432065	
		Beta-Cyfluthrin	1.5	U	ng/L	P432065	
		PCB-1232	2.4	U	ng/L	P432065	
		Bifenthrin	0.59	U	ng/L	P432065	
		PCB-1242	2.4	U	ng/L	P432065	
		PCB-1248	2.4	U	ng/L	P432065	
		Chlorothalonil	4.3	U	ng/L	P432065	
		PCB-1254	2.4	U	ng/L	P432065	
		Cis-Nonachlor	0.24	U	ng/L	P432065	
		PCB-1260	2.4	U	ng/L	P432065	
		Cypermethrin	1.8	U	ng/L	P432065	
		Dacthal	0.18	UJ	ng/L	P432065	CCV, RPD
		DDD-p,p'	0.30	U	ng/L	P432065	
		DDE-p,p'	0.24	U	ng/L	P432065	
		DDT-p,p'	0.95	U	ng/L	P432065	
		Delta-BHC	0.47	U	ng/L	P432065	
		Deltamethrin	1.5	U	ng/L	P432065	
		Dichlobenil	0.30	U	ng/L	P432065	
		Dicofol	1.5	U	ng/L	P432065	
		Dieldrin	0.47	U	ng/L	P432065	
		Endosulfan I	0.47	U	ng/L	P432065	MS, RPD
		Endosulfan II	1.1	U	ng/L	P432065	
		Endosulfan Sulfate	0.36	U	ng/L	P432065	
		Endrin	1.1	U	ng/L	P432065	
		Endrin Aldehyde	0.89	U	ng/L	P432065	
		Endrin Ketone	0.47	U	ng/L	P432065	
		Esfenvalerate	0.89	U	ng/L	P432065	
		Ethalfuralin	0.18	U	ng/L	P432065	
		Fenpropathrin	0.30	U	ng/L	P432065	
		Gamma-BHC	0.15	U	ng/L	P432065	MS, RPD
		Gamma-Chlordane	0.24	U	ng/L	P432065	
		Heptachlor	0.24	U	ng/L	P432065	
		Heptachlor Epoxide	0.30	U	ng/L	P432065	
		Hexachlorobenzene**	1.2	U	ng/L	P432065	
		Kepone	16	U	ng/L	P432065	
		Lambda-Cyhalothrin	0.89	U	ng/L	P432065	
		Methoprene	0.89	U	ng/L	P432065	
		Methoxychlor	0.36	U	ng/L	P432065	
		MGK-264	0.24	U	ng/L	P432065	RPD

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421580	EPA 8270E	Mirex	0.41	U	ng/L	P432065	
		Oxychlordane	0.36	U	ng/L	P432065	
		Permethrin	1.9	U	ng/L	P432065	
		Phenothrin	1.1	U	ng/L	P432065	
		Piperonyl Butoxide	0.18	U	ng/L	P432065	
		Prallethrin	2.4	U	ng/L	P432065	
		Tau-Fluvalinate	0.30	U	ng/L	P432065	
		Tetramethrin	0.89	U	ng/L	P432065	
		Trans-Nonachlor	0.24	U	ng/L	P432065	
		Triclosan Methyl	0.18	U	ng/L	P432065	
		Trifluralin	0.24	U	ng/L	P432065	
	EPA 8276	Chlordane	2.4	U	ng/L	P432065	
		Toxaphene	18	U	ng/L	P432065	
2421584	EPA 200.7 Rev. 4.4	Calcium	2.36		mg/L	P432174	
		Iron	1.0E+03		ug/L	P432174	
		Magnesium	1.29		mg/L	P432174	
		Potassium	0.44	I	mg/L	P432174	
		Sodium	2.4		mg/L	P432174	
		Strontium	11.9		ug/L	P432174	
		Tin	3.0	U	ug/L	P432174	
		Titanium	1.8	I	ug/L	P432174	
		Vanadium	2.0	U	ug/L	P432174	
		Zinc	5.0	U	ug/L	P432174	
	EPA 200.8 Rev. 5.4	Aluminum	86		ug/L	P432174	
		Antimony	0.050	U	ug/L	P432174	
		Arsenic	0.48		ug/L	P432174	
		Barium	25.5		ug/L	P432174	
		Beryllium	0.010	U	ug/L	P432174	
		Boron	10.7		ug/L	P432174	
		Cadmium	0.020	U	ug/L	P432174	
		Chromium	0.40	U	ug/L	P432174	
		Cobalt	0.167		ug/L	P432174	
		Copper	0.40	U	ug/L	P432174	
		Lead	0.20	U	ug/L	P432174	
		Manganese	14.9		ug/L	P432174	
		Molybdenum	0.15	U	ug/L	P432174	
		Nickel	0.50	U	ug/L	P432174	
		Selenium	0.20	U	ug/L	P432174	
	SM 2340 B-2011	Silver	0.010	U	ug/L	P432512	
		Thallium	0.10	U	ug/L	P432174	
		Hardness	11.2		mg/L	P432174	

Ref. Method and Comment:

EPA 8270E: MS accuracy for dieldrin not assessed due to high content of this parameter in the sample spiked. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: OAK CREEK BELOW TOMMY STEELE ROAD Collection Date/Time: 07/05/2023 10:55

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421581	EPA 8321B	2,4-D	0.0061	I	ug/L	P432171	
		Acesulfame K	0.10	U	ug/L	P432281	
		2,4,5-T	0.0040	U	ug/L	P432171	
		AMPA	0.10	U	ug/L	P432281	
		Acetaminophen	0.0080	U	ug/L	P432171	
		Acetamiprid	0.0020	U	ug/L	P432171	
		Endothall	0.25	U	ug/L	P432281	
		Glufosinate	0.10	U	ug/L	P432281	
		Glyphosate	0.10	U	ug/L	P432281	
		Afidopyropen	0.0020	U	ug/L	P432171	
		Bentazon	8.0E-04	U	ug/L	P432171	
		Sucralose	0.031	I	ug/L	P432281	
		Benzovindiflupyr	0.0020	U	ug/L	P432171	
		Carbamazepine	8.0E-04	U	ug/L	P432171	
		Clothianidin	0.0020	U	ug/L	P432171	
		Dinotefuran	0.0020	U	ug/L	P432171	
		Diuron	0.0020	U	ug/L	P432171	
		Fenuron	0.032	U	ug/L	P432171	
		Fluridone	8.0E-04	U	ug/L	P432171	
		Imazapyr	0.0040	U	ug/L	P432171	
		Hydrocodone	0.0020	U	ug/L	P432171	
		Ibuprofen	0.080	U	ug/L	P432171	
		Imidacloprid	0.0020	U	ug/L	P432171	
		Linuron	0.0040	U	ug/L	P432171	
		Mandestrobin	0.0020	U	ug/L	P432171	
		MCPP	0.0020	U	ug/L	P432171	
		Naproxen	0.0080	U	ug/L	P432171	
		Primidone	0.0040	U	ug/L	P432171	
		Pyraclostrobin	0.0020	U	ug/L	P432171	
		Silvex	0.0040	U	ug/L	P432171	
		Thiamethoxam	0.0020	U	ug/L	P432171	
		Tolfenpyrad	0.0020	U	ug/L	P432171	
		Triclopyr	0.0040	U	ug/L	P432171	
2421583	EPA 200.7 Rev. 4.4	Calcium	1.53		mg/L	P432174	
		Iron	1.93E+03		ug/L	P432174	
		Magnesium	0.78		mg/L	P432174	
		Potassium	0.82	I	mg/L	P432174	
		Sodium	1.5	I	mg/L	P432174	
		Strontium	8.6		ug/L	P432174	
		Tin	3.0	U	ug/L	P432174	
		Titanium	3.2		ug/L	P432174	
		Vanadium	2.0	U	ug/L	P432174	
		Zinc	5.0	U	ug/L	P432174	
	EPA 200.8 Rev. 5.4	Aluminum	229		ug/L	P432174	

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421583	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P432174	
		Arsenic	0.58		ug/L	P432174	
		Barium	25.0		ug/L	P432174	
		Beryllium	0.143		ug/L	P432174	
		Boron	11.1		ug/L	P432174	
		Cadmium	0.020	U	ug/L	P432174	
		Chromium	0.40	U	ug/L	P432174	
		Cobalt	0.953		ug/L	P432174	
		Copper	0.45	I	ug/L	P432174	
		Lead	0.47		ug/L	P432174	
		Manganese	78.9		ug/L	P432174	
		Molybdenum	0.15	U	ug/L	P432174	
		Nickel	1.2	I	ug/L	P432174	
		Selenium	0.20	U	ug/L	P432174	
		Silver	0.010	U	ug/L	P432512	
	SM 2340 B-2011	Thallium	0.10	U	ug/L	P432174	
		Hardness	7.0		mg/L	P432174	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: The beryllium result was confirmed in the undigested sample on 07/12/2023.

**Sample Location: WILKINSON CREEK UPSTREAM OF
 WILKINSON BLUFF ROAD**

Collection Date/Time: 07/05/2023 13:45

Field ID: G4NW0357

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421582	EPA 8321B	2,4-D	0.0029	I	ug/L	P432171	
		Acesulfame K	0.10	U	ug/L	P432281	
		2,4,5-T	0.0040	U	ug/L	P432171	
		AMPA	0.10	U	ug/L	P432281	
		Acetaminophen	0.0080	U	ug/L	P432171	
		Acetamiprid	0.0020	U	ug/L	P432171	
		Endothall	0.25	U	ug/L	P432281	
		Glufosinate	0.10	U	ug/L	P432281	
		Glyphosate	0.10	U	ug/L	P432281	
		Afidopyropen	0.0020	U	ug/L	P432171	
		Bentazon	8.0E-04	U	ug/L	P432171	
		Sucralose	0.24		ug/L	P432281	
		Benzovindiflupyr	0.0020	U	ug/L	P432171	
		Carbamazepine	8.0E-04	U	ug/L	P432171	
		Clothianidin	0.0020	U	ug/L	P432171	
		Dinotefuran	0.0020	U	ug/L	P432171	
		Diuron	0.0020	U	ug/L	P432171	
		Fenuron	0.032	U	ug/L	P432171	
		Fluridone	8.0E-04	U	ug/L	P432171	
		Imazapyr	0.0040	U	ug/L	P432171	
		Hydrocodone	0.0020	U	ug/L	P432171	
		Ibuprofen	0.080	U	ug/L	P432171	
		Imidacloprid	0.0059	I	ug/L	P432171	
		Linuron	0.0040	U	ug/L	P432171	
		Mandestrobin	0.0020	U	ug/L	P432171	
		MCPP	0.0020	U	ug/L	P432171	
		Naproxen	0.0080	U	ug/L	P432171	
		Primidone	0.0040	U	ug/L	P432171	
		Pyraclostrobin	0.0020	U	ug/L	P432171	
		Silvex	0.0040	U	ug/L	P432171	
		Thiamethoxam	0.0020	U	ug/L	P432171	
		Tolfenpyrad	0.0020	U	ug/L	P432171	
		Triclopyr	0.0040	U	ug/L	P432171	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P432174

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: P432174

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
Cobalt	0.020	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
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P432512

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 8270E

Batch ID: P432065

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P432065

Component	Result	Code	Units
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P432065

Component	Result	Code	Units
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8276

Batch ID: P432065

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: EPA 8321B

Batch ID: P432171

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	0.032	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

Reference Method: EPA 8321B

Batch ID: P432281

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 Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P432174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	104		P	85 - 115
Strontium	100		P	85 - 115
Tin	101		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P432174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	99.3		P	85 - 115
Arsenic	103		P	85 - 115
Barium	103		P	85 - 115
Beryllium	96.2		P	85 - 115
Boron	102		P	85 - 115
Cadmium	98.5		P	85 - 115
Chromium	94.4		P	85 - 115
Cobalt	99.0		P	85 - 115
Copper	99.9		P	85 - 115
Lead	92.3		P	85 - 115
Manganese	95.9		P	85 - 115
Molybdenum	99.6		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	104		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P432512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	98.3		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	49.6		P	30 - 96.0
Alpha-BHC	82.7		P	70 - 109
Alpha-Chlordane	46.7		P	45 - 107
Beta-BHC	80.1		P	64 - 138
Beta-Cyfluthrin	57.2		P	17 - 141
Bifenthrin	61.2		P	10 - 113
Chlorothalonil	97.5		P	26 - 180
Cis-Nonachlor	95.0		P	37 - 102
Cypermethrin	51.1		P	20 - 133
Dacthal	94.8		P	69 - 114

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DDD-p,p'	47.5		P	42 - 105
DDE-p,p'	49.6		P	42 - 106
DDT-p,p'	72.0		P	42 - 107
Delta-BHC	67.3		P	67 - 144
Deltamethrin	55.7		P	15 - 149
Dichlobenil	67.6		P	46 - 117
Dicofol	78.2		P	34 - 114
Dieldrin	88.5		P	50 - 108
Endosulfan I	64.5		P	55 - 104
Endosulfan II	53.1		P	51 - 111
Endosulfan Sulfate	67.9		P	56 - 121
Endrin	81.5		P	10 - 106
Endrin Aldehyde	71.9		P	34 - 114
Endrin Ketone	73.0		P	63 - 177
Esfenvalerate	53.4		P	29 - 143
Ethalfuralin	54.3		P	46 - 96.0
Fenpropathrin	82.4		P	28 - 115
Gamma-BHC	85.0		P	65 - 121
Gamma-Chlordane	48.6		P	39 - 103
Heptachlor	81.2		P	39 - 94.0
Heptachlor Epoxide	56.2		P	54 - 104
Hexachlorobenzene	71.9		P	36 - 100
Kepone	73.3		P	10 - 225
Lambda-Cyhalothrin	41.0		P	10 - 135
Methoprene	36.0		P	10 - 109
Methoxychlor	75.2		P	52 - 112
MGK-264	79.9		P	44 - 117
Mirex	58.0		P	20 - 90.0
Oxychlordane	44.3		P	44 - 102
PCB-1016	76.7		P	45 - 107
PCB-1260	71.1		P	40 - 118
Permethrin	52.4		P	18 - 135
Phenothrin	56.6		P	10 - 102
Piperonyl Butoxide	84.8		P	28 - 156
Prallethrin	65.1		P	28 - 113
Tau-Fluvalinate	51.6		P	10 - 123
Tetramethrin	75.6		P	18 - 158
Trans-Nonachlor	78.6		P	39 - 104
Triclosan Methyl	64.9		P	54 - 108
Trifluralin	70.3		P	46 - 97.0

Reference Method: EPA 8276
Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	74.0		P	52 - 117
Toxaphene	77.3		P	44 - 125

Reference Method: EPA 8321B
Batch ID: P432171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P432171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.9		P	40 - 150
2,4,5-T	93.6		P	40 - 150
Acetaminophen	83.5		P	30 - 150
Acetamiprid	75.4		P	40 - 150
Afidopyropen	57.1		P	30 - 150
Bentazon	124		P	30 - 150
Benzovindiflupyr	87.1		P	40 - 150
Carbamazepine	77.9		P	40 - 150
Clothianidin	88.6		P	40 - 150
Dinotefuran	102		P	40 - 150
Diuron	43.2		P	40 - 150
Fenuron	90.9		P	40 - 150
Fluridone	93.2		P	40 - 150
Hydrocodone	76.8		P	40 - 150
Ibuprofen	93.2		P	40 - 150
Imazapyr	85.7		P	40 - 150
Imidacloprid	89.2		P	40 - 150
Linuron	78.6		P	40 - 150
Mandestrobin	77.9		P	40 - 150
MCPP	104		P	40 - 150
Naproxen	85.2		P	40 - 150
Primidone	82.8		P	40 - 150
Pyraclostrobin	83.9		P	40 - 150
Silvex	108		P	40 - 150
Thiamethoxam	87.7		P	40 - 150
Tolfenpyrad	60.2		P	30 - 150
Triclopyr	96.0		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P432281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	80.7		P	40 - 150
Endothall	71.5		P	40 - 150
Glufosinate	119		P	40 - 150
Glyphosate	125		P	40 - 150
Sucralose	89.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421584	Calcium	106	106	P/P	80 - 120
2421584	Iron	105	105	P/P	80 - 120
2421584	Magnesium	105	105	P/P	80 - 120
2421584	Potassium	101	101	P/P	80 - 120
2421584	Sodium	103	102	P/P	80 - 120
2421584	Strontium	100	99.8	P/P	80 - 120
2421584	Tin	104	102	P/P	80 - 120
2421584	Titanium	101	104	P/P	80 - 120
2421584	Vanadium	102	103	P/P	80 - 120
2421584	Zinc	101	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421584	Aluminum	103	100	P/P	80 - 120
2421584	Antimony	101	99.0	P/P	80 - 120
2421584	Arsenic	102	100	P/P	80 - 120
2421584	Barium	106	103	P/P	80 - 120
2421584	Beryllium	97.8	97.9	P/P	80 - 120
2421584	Boron	105	102	P/P	80 - 120
2421584	Cadmium	102	99.2	P/P	80 - 120
2421584	Chromium	95.4	94.1	P/P	80 - 120
2421584	Cobalt	99.2	96.6	P/P	80 - 120
2421584	Copper	101	100	P/P	80 - 120
2421584	Lead	94.7	93.1	P/P	80 - 120
2421584	Manganese	97.7	94.5	P/P	80 - 120
2421584	Molybdenum	100	98.6	P/P	80 - 120
2421584	Nickel	101	99.7	P/P	80 - 120
2421584	Selenium	103	98.9	P/P	80 - 120
2421584	Thallium	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421707	Silver	99.3	106	P/P	80 - 120
2423336	Silver	103		P	80 - 120

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422038	Aldrin	48.3	52.8	P/P	24 - 81.0
2422038	Alpha-BHC	73.5	88.4	P/P	65 - 110
2422038	Alpha-Chlordane	77.0	76.1	P/P	43 - 119
2422038	Beta-BHC	61.3	110	P/P	54 - 165
2422038	Beta-Cyfluthrin	40.2	43.7	P/P	27 - 165
2422038	Bifenthrin	45.9	51.5	P/P	17 - 117
2422038	Chlorothalonil	70.7	68.0	P/P	10 - 255
2422038	Cis-Nonachlor	56.4	63.2	P/P	34 - 98.0
2422038	Cypermethrin	46.1	50.6	P/P	25 - 143

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422038	Dacthal	77.2	114	P/P	55 - 139
2422038	DDD-p,p'	54.8	51.1	P/P	30 - 109
2422038	DDE-p,p'	54.0	44.2	P/P	35 - 106
2422038	DDT-p,p'	60.1	66.1	P/P	41 - 101
2422038	Delta-BHC	78.3	97.1	P/P	58 - 165
2422038	Deltamethrin	47.3	53.4	P/P	10 - 194
2422038	Dichlobenil	50.1	63.7	P/P	22 - 114
2422038	Dicofol	67.5	93.4	P/P	17 - 133
2422038	Endosulfan I	71.1	125	P/F	49 - 104
2422038	Endosulfan II	60.2	54.4	P/P	37 - 117
2422038	Endosulfan Sulfate	61.0	68.4	P/P	38 - 128
2422038	Endrin	56.7	57.8	P/P	35 - 116
2422038	Endrin Aldehyde	63.1	52.9	P/P	19 - 108
2422038	Endrin Ketone	76.2	60.2	P/P	44 - 134
2422038	Esfenvalerate	58.3	56.8	P/P	27 - 176
2422038	Ethalfuralin	65.7	55.5	P/P	49 - 100
2422038	Fenpropathrin	56.9	62.7	P/P	34 - 117
2422038	Gamma-BHC	96.0	143	P/F	59 - 129
2422038	Gamma-Chlordane	60.9	68.3	P/P	33 - 107
2422038	Heptachlor	67.1	71.2	P/P	37 - 94.0
2422038	Heptachlor Epoxide	75.0	61.9	P/P	38 - 118
2422038	Hexachlorobenzene	72.8	91.8	P/P	35 - 97.0
2422038	Kepone	40.8	68.7	P/P	10 - 221
2422038	Lambda-Cyhalothrin	46.1	49.1	P/P	23 - 190
2422038	Methoprene	41.5	34.1	P/P	21 - 109
2422038	Methoxychlor	57.8	77.9	P/P	46 - 118
2422038	MGK-264	55.9	107	P/P	39 - 122
2422038	Mirex	39.0	40.0	P/P	25 - 90.0
2422038	Oxychlordane	64.9	68.5	P/P	42 - 100
2422038	Permethrin	46.0	41.2	P/P	33 - 181
2422038	Phenothrin	67.6	79.0	P/P	12 - 125
2422038	Piperonyl Butoxide	62.7	74.3	P/P	10 - 178
2422038	Prallethrin	67.3	68.6	P/P	24 - 122
2422038	Tau-Fluvalinate	53.5	54.6	P/P	13 - 151
2422038	Tetramethrin	71.9	77.1	P/P	16 - 172
2422038	Trans-Nonachlor	66.3	75.3	P/P	39 - 100
2422038	Triclosan Methyl	71.9	93.0	P/P	43 - 110
2422038	Trifluralin	63.4	67.4	P/P	45 - 94.0
2422046	PCB-1016	82.8	73.9	P/P	45 - 107
2422046	PCB-1260	82.4	66.7	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422046	Chlordane	82.3	71.7	P/P	43 - 123
2422046	Toxaphene	109	86.1	P/P	27 - 156

Reference Method: EPA 8321B
Batch ID: P432171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P432171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421581	2,4-D	101	95.4	P/P	40 - 150
2421581	2,4,5-T	110	111	P/P	40 - 150
2421581	Acetaminophen	80.9	81.4	P/P	30 - 150
2421581	Acetamiprid	55.1	55.9	P/P	40 - 150
2421581	Afidopyropen	48.7	48.3	P/P	30 - 150
2421581	Bentazon	72.1	70.8	P/P	30 - 150
2421581	Benzovindiflupyr	79.5	86.5	P/P	40 - 150
2421581	Carbamazepine	57.0	55.6	P/P	40 - 150
2421581	Clothianidin	81.8	80.1	P/P	40 - 150
2421581	Dinotefuran	68.4	75.5	P/P	40 - 150
2421581	Diuron	40.3	53.7	P/P	40 - 150
2421581	Fenuron	61.8	61.6	P/P	40 - 150
2421581	Fluridone	86.7	83.6	P/P	40 - 150
2421581	Hydrocodone	53.2	55.4	P/P	40 - 150
2421581	Ibuprofen	69.1	75.2	P/P	40 - 150
2421581	Imazapyr	91.1	92.4	P/P	40 - 150
2421581	Imidacloprid	117	118	P/P	40 - 150
2421581	Linuron	58.8	66.9	P/P	40 - 150
2421581	Mandestrobin	74.4	75.2	P/P	40 - 150
2421581	MCCPP	124	119	P/P	40 - 150
2421581	Naproxen	59.2	55.9	P/P	40 - 150
2421581	Primidone	76.5	78.3	P/P	40 - 150
2421581	Pyraclostrobin	78.5	79.0	P/P	40 - 150
2421581	Silvex	100	108	P/P	40 - 150
2421581	Thiamethoxam	67.3	59.9	P/P	40 - 150
2421581	Tolfenpyrad	51.7	53.1	P/P	30 - 150
2421581	Triclopyr	114	116	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P432281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421699	Acesulfame K	110	113	P/P	40 - 150
2421699	AMPA	136	124	P/P	40 - 150
2421699	Endothall	74.5	71.9	P/P	40 - 150
2421699	Glufosinate	124	143	P/P	40 - 150
2421699	Glyphosate	124	123	P/P	40 - 150
2421699	Sucralose	94.8	98.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P432174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421584	Calcium	0.281	Spike	P	0 - 20
2421584	Iron	0.168	Spike	P	0 - 20
2421584	Magnesium	0.305	Spike	P	0 - 20
2421584	Potassium	0.144	Spike	P	0 - 20
2421584	Sodium	0.504	Spike	P	0 - 20
2421584	Strontium	0.307	Spike	P	0 - 20
2421584	Tin	1.90	Spike	P	0 - 20
2421584	Titanium	2.82	Spike	P	0 - 20
2421584	Vanadium	1.25	Spike	P	0 - 20
2421584	Zinc	1.69	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P432174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421584	Aluminum	2.29	Spike	P	0 - 20
2421584	Antimony	2.09	Spike	P	0 - 20
2421584	Arsenic	1.94	Spike	P	0 - 20
2421584	Barium	2.68	Spike	P	0 - 20
2421584	Beryllium	0.0746	Spike	P	0 - 20
2421584	Boron	2.99	Spike	P	0 - 20
2421584	Cadmium	2.39	Spike	P	0 - 20
2421584	Chromium	1.43	Spike	P	0 - 20
2421584	Cobalt	2.62	Spike	P	0 - 20
2421584	Copper	1.32	Spike	P	0 - 20
2421584	Lead	1.72	Spike	P	0 - 20
2421584	Manganese	2.39	Spike	P	0 - 20
2421584	Molybdenum	1.62	Spike	P	0 - 20
2421584	Nickel	1.73	Spike	P	0 - 20
2421584	Selenium	3.65	Spike	P	0 - 20
2421584	Thallium	1.98	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P432512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421707	Silver	6.34	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422038	Aldrin	8.98	Spike	P	0 - 41
2422038	Alpha-BHC	18.5	Spike	P	0 - 25
2422038	Alpha-Chlordane	1.21	Spike	P	0 - 32
2422038	Beta-BHC	56.9	Spike	F	0 - 33
2422038	Beta-Cyfluthrin	8.42	Spike	P	0 - 43
2422038	Bifenthrin	11.6	Spike	P	0 - 52

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422038	Chlorothalonil	3.89	Spike	P	0 - 82
2422038	Cis-Nonachlor	11.2	Spike	P	0 - 33
2422038	Cypermethrin	9.29	Spike	P	0 - 51
2422038	Dacthal	38.2	Spike	F	0 - 27
2422038	DDD-p,p'	6.99	Spike	P	0 - 39
2422038	DDE-p,p'	19.9	Spike	P	0 - 31
2422038	DDT-p,p'	9.50	Spike	P	0 - 29
2422038	Delta-BHC	21.4	Spike	P	0 - 35
2422038	Deltamethrin	12.2	Spike	P	0 - 100
2422038	Dichlobenil	24.0	Spike	P	0 - 40
2422038	Dicofol	32.1	Spike	P	0 - 37
2422038	Dieldrin	0.898	Spike	P	0 - 27
2422038	Endosulfan I	54.7	Spike	F	0 - 23
2422038	Endosulfan II	10.1	Spike	P	0 - 34
2422038	Endosulfan Sulfate	11.5	Spike	P	0 - 36
2422038	Endrin	1.97	Spike	P	0 - 45
2422038	Endrin Aldehyde	17.5	Spike	P	0 - 76
2422038	Endrin Ketone	23.4	Spike	P	0 - 43
2422038	Esfenvalerate	2.69	Spike	P	0 - 51
2422038	Ethalfuralin	16.9	Spike	P	0 - 22
2422038	Fenpropathrin	9.65	Spike	P	0 - 49
2422038	Gamma-BHC	39.2	Spike	F	0 - 28
2422038	Gamma-Chlordane	10.3	Spike	P	0 - 40
2422038	Heptachlor	5.93	Spike	P	0 - 29
2422038	Heptachlor Epoxide	8.62	Spike	P	0 - 33
2422038	Hexachlorobenzene	23.1	Spike	P	0 - 36
2422038	Kepone	51.0	Spike	P	0 - 85
2422038	Lambda-Cyhalothrin	6.39	Spike	P	0 - 55
2422038	Methoprene	19.5	Spike	P	0 - 53
2422038	Methoxychlor	29.6	Spike	P	0 - 50
2422038	MGK-264	63.0	Spike	F	0 - 43
2422038	Mirex	2.45	Spike	P	0 - 40
2422038	Oxychlordane	5.50	Spike	P	0 - 31
2422038	Permethrin	11.1	Spike	P	0 - 50
2422038	Phenothrin	15.5	Spike	P	0 - 58
2422038	Piperonyl Butoxide	17.1	Spike	P	0 - 100
2422038	Prallethrin	1.80	Spike	P	0 - 39
2422038	Tau-Fluvalinate	2.06	Spike	P	0 - 54
2422038	Tetramethrin	6.97	Spike	P	0 - 51
2422038	Trans-Nonachlor	12.8	Spike	P	0 - 39
2422038	Triclosan Methyl	25.6	Spike	P	0 - 31
2422038	Trifluralin	6.05	Spike	P	0 - 22
2422046	PCB-1016	11.4	Spike	P	0 - 25
2422046	PCB-1260	21.0	Spike	P	0 - 30

Reference Method: EPA 8276

Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422046	Chlordane	13.7	Spike	P	0 - 28

Quality Assurance Report Precision

Reference Method: EPA 8276

Batch ID: P432065

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422046	Toxaphene	23.6	Spike	P	0 - 27

Reference Method: EPA 8321B

Batch ID: P432171

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421581	2,4-D	5.43	Spike	P	0 - 30
2421581	2,4,5-T	1.01	Spike	P	0 - 30
2421581	Acetaminophen	0.607	Spike	P	0 - 30
2421581	Acetamiprid	1.38	Spike	P	0 - 30
2421581	Afidopyropen	0.710	Spike	P	0 - 30
2421581	Bentazon	1.87	Spike	P	0 - 30
2421581	Benzovindiflupyr	8.42	Spike	P	0 - 30
2421581	Carbamazepine	2.42	Spike	P	0 - 30
2421581	Clothianidin	2.11	Spike	P	0 - 30
2421581	Dinotefuran	9.88	Spike	P	0 - 30
2421581	Diuron	28.5	Spike	P	0 - 30
2421581	Fenuron	0.416	Spike	P	0 - 30
2421581	Fluridone	3.75	Spike	P	0 - 30
2421581	Hydrocodone	3.96	Spike	P	0 - 30
2421581	Ibuprofen	8.48	Spike	P	0 - 30
2421581	Imazapyr	1.37	Spike	P	0 - 30
2421581	Imidacloprid	0.336	Spike	P	0 - 30
2421581	Linuron	12.8	Spike	P	0 - 30
2421581	Mandestrobin	0.994	Spike	P	0 - 30
2421581	MCP	4.20	Spike	P	0 - 30
2421581	Naproxen	5.72	Spike	P	0 - 30
2421581	Primidone	2.40	Spike	P	0 - 30
2421581	Pyraclostrobin	0.620	Spike	P	0 - 30
2421581	Silvex	7.16	Spike	P	0 - 30
2421581	Thiamethoxam	11.6	Spike	P	0 - 30
2421581	Tolfenpyrad	2.73	Spike	P	0 - 30
2421581	Triclopyr	1.63	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P432281

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421699	Acesulfame K	3.03	Spike	P	0 - 30
2421699	AMPA	9.17	Spike	P	0 - 30
2421699	Endothall	3.45	Spike	P	0 - 30
2421699	Glufosinate	13.7	Spike	P	0 - 30
2421699	Glyphosate	0.793	Spike	P	0 - 30
2421699	Sucralose	3.42	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2421580

Field Sample ID: G4NW0336

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	67.4	P	37 - 129
EPA 8270E	Decachlorobiphenyl	34.5	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	46.6	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	43.4	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	29.9	P	28 - 102
EPA 8276	PCNB	67.3	P	49 - 115

Lab Sample ID: 2421581

Field Sample ID: G4NW0395

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.9	P	30 - 160
EPA 8321B	Diuron-d6	58.9	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.9	P	30 - 160
EPA 8321B	Primidone-d5	74.9	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Lab Sample ID: 2421582

Field Sample ID: G4NW0357

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.2	P	30 - 160
EPA 8321B	Diuron-d6	73.9	P	30 - 160
EPA 8321B	Endothall-d6	84.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	120	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.6	P	30 - 160
EPA 8321B	Primidone-d5	91.4	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A120279

Included Lab Sample IDs: 2421581, 2421582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.3	89.4	P/P	50 - 150
2,4,5-T	102	83.6	P/P	50 - 150
Acetaminophen	104	100	P/P	60 - 160
Acetamiprid	106	103	P/P	50 - 150
Afidopyropen	91.2	101	P/P	50 - 150
Bentazon	135	150	P/P	50 - 160
Benzovindiflupyr	99.6	98.9	P/P	50 - 150
Carbamazepine	110	105	P/P	60 - 150
Clothianidin	122	109	P/P	60 - 150
Dinotefuran	116	112	P/P	50 - 150
Diuron	117	101	P/P	60 - 160
Fenuron	107	104	P/P	60 - 150
Fluridone	103	112	P/P	60 - 160
Hydrocodone	112	112	P/P	60 - 150
Ibuprofen	118	103	P/P	50 - 160
Imazapyr	96.4	89.4	P/P	50 - 150
Imidacloprid	109	111	P/P	60 - 150
Linuron	118	102	P/P	60 - 150
Mandestrobin	97.4	107	P/P	50 - 150
MCPP	97.0	93.1	P/P	50 - 150
Naproxen	68.1	105	P/P	50 - 160
Primidone	108	101	P/P	60 - 150
Pyraclostrobin	108	115	P/P	60 - 150
Silvex	97.9	97.3	P/P	50 - 150
Thiamethoxam	117	112	P/P	50 - 150
Tolfenpyrad	105	108	P/P	60 - 150
Triclopyr	112	99.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A120281

Included Lab Sample IDs: 2421583, 2421584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Aluminum	100	101	P/P	90 - 110
Antimony	98.5	98.4	P/P	90 - 110
Antimony	98.7	98.5	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Beryllium	101	99.4	P/P	90 - 110
Beryllium	99.4	98.8	P/P	90 - 110
Boron	96.1	97.7	P/P	90 - 110
Boron	97.7	99.7	P/P	90 - 110
Cadmium	98.8	99.5	P/P	90 - 110
Cadmium	99.5	99.4	P/P	90 - 110
Chromium	95.2	94.9	P/P	90 - 110
Chromium	97.2	95.2	P/P	90 - 110
Cobalt	97.2	99.2	P/P	90 - 110
Cobalt	99.3	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A120281

Included Lab Sample IDs: 2421583, 2421584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	98.2	P/P	90 - 110
Copper	98.2	100	P/P	90 - 110
Lead	92.0	92.5	P/P	90 - 110
Lead	92.3	92.0	P/P	90 - 110
Manganese	96.1	96.5	P/P	90 - 110
Manganese	97.6	96.1	P/P	90 - 110
Molybdenum	99.6	99.9	P/P	90 - 110
Molybdenum	99.9	99.0	P/P	90 - 110
Nickel	101	99.6	P/P	90 - 110
Nickel	99.6	101	P/P	90 - 110
Selenium	99.0	99.9	P/P	90 - 110
Selenium	99.9	99.2	P/P	90 - 110
Thallium	100	101	P/P	90 - 110
Thallium	101	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A120282

Included Lab Sample IDs: 2421583, 2421584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	95 - 105
Calcium	102	101	P/P	90 - 110
Iron	101	103	P/P	90 - 110
Iron	102	101	P/P	95 - 105
Magnesium	101	103	P/P	90 - 110
Magnesium	101	101	P/P	95 - 105
Potassium	100	102	P/P	90 - 110
Potassium	100	100	P/P	95 - 105
Sodium	100	100	P/P	95 - 105
Sodium	100	101	P/P	90 - 110
Strontium	101	102	P/P	95 - 105
Strontium	102	101	P/P	90 - 110
Tin	100	100	P/P	90 - 110
Tin	101	100	P/P	95 - 105
Titanium	100	101	P/P	90 - 110
Titanium	100	100	P/P	95 - 105
Vanadium	100	101	P/P	90 - 110
Vanadium	101	100	P/P	95 - 105
Zinc	101	100	P/P	90 - 110
Zinc	102	101	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A120301

Included Lab Sample IDs: 2421581, 2421582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	102	P/P	60 - 160
Endothall	72.5	74.6	P/P	60 - 160
Glufosinate	116	118	P/P	60 - 160
Glyphosate	129	127	P/P	60 - 160

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8321B

Run ID: A120302

Included Lab Sample IDs: 2421581, 2421582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	126	P/P	60 - 160
Sucralose	103	90.7	P/P	60 - 160

Reference Method: EPA 8270E

Run ID: A120361

Included Lab Sample IDs: 2421580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	91.5		P	80 - 120
Alpha-BHC	104		P	80 - 120
Alpha-Chlordane	104		P	80 - 120
Beta-BHC	82.3		P	80 - 120
Beta-Cyfluthrin	98.3		P	80 - 120
Bifenthrin	99.4		P	80 - 120
Chlorothalonil	101		P	80 - 120
Cis-Nonachlor	113		P	80 - 120
Cypermethrin	115		P	80 - 120
Dacthal	124*		F	80 - 120
DDD-p,p'	95.4		P	80 - 120
DDE-p,p'	109		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	102		P	80 - 120
Deltamethrin	105		P	80 - 120
Dichlobenil	89.2		P	80 - 120
Dicofol	95.2		P	80 - 120
Dieldrin	104		P	80 - 120
Endosulfan I	97.5		P	80 - 120
Endosulfan II	89.9		P	80 - 120
Endosulfan Sulfate	95.9		P	80 - 120
Endrin	115		P	80 - 120
Endrin Aldehyde	95.5		P	80 - 120
Endrin Ketone	83.1		P	80 - 120
Esfenvalerate	89.6		P	80 - 120
Ethalfuralin	85.7		P	80 - 120
Fenpropathrin	88.3		P	80 - 120
Gamma-BHC	92.3		P	80 - 120
Gamma-Chlordane	99.5		P	80 - 120
Heptachlor	107		P	80 - 120
Heptachlor Epoxide	112		P	80 - 120
Hexachlorobenzene	112		P	80 - 120
Kepone	110		P	80 - 120
Lambda-Cyhalothrin	89.5		P	80 - 120
Methoprene	83.8		P	80 - 120
Methoxychlor	98.5		P	80 - 120
MGK-264	95.7		P	80 - 120
Mirex	90.2		P	80 - 120
Oxychlordane	96.6		P	80 - 120
Permethrin	112		P	80 - 120
Phenothrin	111		P	80 - 120
Piperonyl Butoxide	99.8		P	80 - 120
Prallethrin	92.6		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A120361
Included Lab Sample IDs: 2421580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tau-Fluvalinate	89.7		P	80 - 120
Tetramethrin	120		P	80 - 120
Trans-Nonachlor	95.6		P	80 - 120
Triclosan Methyl	101		P	80 - 120
Trifluralin	113		P	80 - 120

Reference Method: EPA 8276
Run ID: A120364
Included Lab Sample IDs: 2421580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	98.7		P	80 - 120
Toxaphene	104		P	80 - 120

Reference Method: EPA 8270E
Run ID: A120374
Included Lab Sample IDs: 2421580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	101		P	80 - 120
PCB-1260	95.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120441
Included Lab Sample IDs: 2421583, 2421584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	103	97.8	P/P	90 - 110
Silver	97.8	99.0	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	106	106	106			0.281
	Iron	105	105	105			0.168
	Magnesium	105	105	105			0.305
	Potassium	101	101	101			0.144
	Sodium	104	103	102			0.504
	Strontium	100	100	99.8			0.307
	Tin	101	104	102			1.90
	Titanium	101	101	104			2.82
	Vanadium	101	102	103			1.25
	Zinc	101	101	103			1.69
EPA 200.8 Rev. 5.4	Aluminum	100	103	100			2.29
	Antimony	99.3	101	99.0			2.09
	Arsenic	103	102	100			1.94
	Barium	103	106	103			2.68
	Beryllium	96.2	97.8	97.9			0.0746
	Boron	102	105	102			2.99
	Cadmium	98.5	102	99.2			2.39
	Chromium	94.4	95.4	94.1			1.43
	Cobalt	99.0	99.2	96.6			2.62
	Copper	99.9	101	100			1.32
	Lead	92.3	94.7	93.1			1.72
	Manganese	95.9	97.7	94.5			2.39
	Molybdenum	99.6	100	98.6			1.62
	Nickel	99.2	101	99.7			1.73
	Selenium	104	103	98.9			3.65
	Silver	98.3	99.3	106	103		6.34
	Thallium	100	104	102			1.98
	Aldrin	49.6	48.3	52.8			8.98
	Alpha-BHC	82.7	73.5	88.4			18.5
	Alpha-Chlordane	46.7	77.0	76.1			1.21
	Beta-BHC	80.1	61.3	110			56.9
EPA 8270E	Beta-Cyfluthrin	57.2	40.2	43.7			8.42
	Bifenthrin	61.2	45.9	51.5			11.6
	Chlorothalonil	97.5	70.7	68.0			3.89
	Cis-Nonachlor	95.0	56.4	63.2			11.2
	Cypermethrin	51.1	46.1	50.6			9.29
	Dacthal	94.8	77.2	114			38.2
	DDD-p,p'	47.5	54.8	51.1			6.99
	DDE-p,p'	49.6	54.0	44.2			19.9
	DDT-p,p'	72.0	60.1	66.1			9.50
	Delta-BHC	67.3	78.3	97.1			21.4
	Deltamethrin	55.7	47.3	53.4			12.2
	Dichlobenil	67.6	50.1	63.7			24.0
	Dicofol	78.2	67.5	93.4			32.1
	Dieldrin	88.5					0.898
	Endosulfan I	64.5	71.1	125			54.7
	Endosulfan II	53.1	60.2	54.4			10.1
	Endosulfan Sulfate	67.9	61.0	68.4			11.5
	Endrin	81.5	56.7	57.8			1.97
	Endrin Aldehyde	71.9	63.1	52.9			17.5
	Endrin Ketone	73.0	76.2	60.2			23.4
	Esfenvalerate	53.4	58.3	56.8			2.69
	Ethalfuralin	54.3	65.7	55.5			16.9
	Fenpropathrin	82.4	56.9	62.7			9.65

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Gamma-BHC	85.0	96.0	143		39.2
	Gamma-Chlordane	48.6	60.9	68.3		10.3
	Heptachlor	81.2	67.1	71.2		5.93
	Heptachlor Epoxide	56.2	75.0	61.9		8.62
	Hexachlorobenzene	71.9	72.8	91.8		23.1
	Kepone	73.3	40.8	68.7		51.0
	Lambda-Cyhalothrin	41.0	46.1	49.1		6.39
	Methoprene	36.0	41.5	34.1		19.5
	Methoxychlor	75.2	57.8	77.9		29.6
	MGK-264	79.9	55.9	107		63.0
	Mirex	58.0	39.0	40.0		2.45
	Oxychlordane	44.3	64.9	68.5		5.50
	PCB-1016	76.7	82.8	73.9		11.4
	PCB-1260	71.1	82.4	66.7		21.0
	Permethrin	52.4	46.0	41.2		11.1
	Phenothrin	56.6	67.6	79.0		15.5
	Piperonyl Butoxide	84.8	62.7	74.3		17.1
	Prallethrin	65.1	67.3	68.6		1.80
	Tau-Fluvalinate	51.6	53.5	54.6		2.06
	Tetramethrin	75.6	71.9	77.1		6.97
	Trans-Nonachlor	78.6	66.3	75.3		12.8
	Triclosan Methyl	64.9	71.9	93.0		25.6
	Trifluralin	70.3	63.4	67.4		6.05
EPA 8276	Chlordane	74.0	82.3	71.7		13.7
	Toxaphene	77.3	109	86.1		23.6
EPA 8321B	2,4-D	90.9	101	95.4		5.43
	2,4,5-T	93.6	110	111		1.01
	Acesulfame K	105	110	113		3.03
	Acetaminophen	83.5	80.9	81.4		0.607
	Acetamiprid	75.4	55.1	55.9		1.38
	Afidopyropen	57.1	48.7	48.3		0.710
	AMPA	80.7	136	124		9.17
	Bentazon	124	72.1	70.8		1.87
	Benzovindiflupyr	87.1	79.5	86.5		8.42
	Carbamazepine	77.9	57.0	55.6		2.42
	Clothianidin	88.6	81.8	80.1		2.11
	Dinotefuran	102	68.4	75.5		9.88
	Diuron	43.2	40.3	53.7		28.5
	Endothall	71.5	74.5	71.9		3.45
	Fenuron	90.9	61.8	61.6		0.416
	Fluridone	93.2	86.7	83.6		3.75
	Glufosinate	119	124	143		13.7
	Glyphosate	125	124	123		0.793
	Hydrocodone	76.8	53.2	55.4		3.96
	Ibuprofen	93.2	69.1	75.2		8.48
	Imazapyr	85.7	91.1	92.4		1.37
	Imidacloprid	89.2	117	118		0.336
	Linuron	78.6	58.8	66.9		12.8
	Mandestrobin	77.9	74.4	75.2		0.994
	MCPP	104	124	119		4.20
	Naproxen	85.2	59.2	55.9		5.72
	Primidone	82.8	76.5	78.3		2.40
	Pyraclostrobin	83.9	78.5	79.0		0.620
	Silvex	108	100	108		7.16

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Sucralose	89.4	94.8	98.2			3.42
	Thiamethoxam	87.7	67.3	59.9			11.6
	Tolfenpyrad	60.2	51.7	53.1			2.73
	Triclopyr	96.0	114	116			1.63

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	2421583, 2421584
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2421583, 2421584
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2421580
EPA 8270E	PCBs in water matrices by GC/MS/MS	2421580
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2421580
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2421581, 2421582
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2421583, 2421584

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	07/06/2023	07/07/2023 13:25	George D Taylor	07/10/2023 14:18	Samatha Luckman	2421583
	07/06/2023	07/07/2023 13:25	George D Taylor	07/10/2023 14:51	Samatha Luckman	2421584
EPA 200.8 Rev. 5.4	07/06/2023	07/07/2023 13:25	George D Taylor	07/10/2023 14:46	Emily M Philpot	2421584
	07/06/2023	07/07/2023 13:25	George D Taylor	07/10/2023 15:53	Emily M Philpot	2421583
	07/06/2023	07/14/2023 12:55	George D Taylor	07/17/2023 13:36	Conrad Hartmann	2421583
	07/06/2023	07/14/2023 12:55	George D Taylor	07/17/2023 14:18	Conrad Hartmann	2421584
	07/06/2023	07/10/2023 08:00	Fe-Val Siddell	07/12/2023 19:55	Michael Poppell	2421580
EPA 8270E	07/06/2023	07/10/2023 08:00	Fe-Val Siddell	07/13/2023 00:05	Lipi Saha	2421580
EPA 8276	07/06/2023	07/10/2023 08:00	Fe-Val Siddell	07/14/2023 01:05	Arthur Maknenko	2421580
EPA 8321B	07/06/2023	07/07/2023 13:05	Hoor Shaik	07/10/2023 18:12	Juyoung Kim	2421581
	07/06/2023	07/07/2023 13:05	Hoor Shaik	07/10/2023 19:08	Juyoung Kim	2421582
	07/06/2023	07/11/2023 12:30	Hana Lee	07/11/2023 15:08	Hana Lee	2421581
	07/06/2023	07/11/2023 12:30	Hana Lee	07/11/2023 15:22	Hana Lee	2421582
	07/06/2023	07/11/2023 12:30	Hana Lee	07/11/2023 23:48	Hana Lee	2421581
	07/06/2023	07/11/2023 12:30	Hana Lee	07/12/2023 00:02	Hana Lee	2421582
SM 2340 B-2011	07/06/2023			07/10/2023 14:18	Samatha Luckman	2421583
	07/06/2023			07/10/2023 14:51	Samatha Luckman	2421584