

Chemical Analysis Report

NW-DIST-2023-08-03-01

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

Event Description: **Laurel Hill West**
Request ID: **RQ-2023-07-31-25**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 21-AUG-2023 15:24

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: OAK CREEK BELOW TOMMY STEELE ROAD Collection Date/Time: 08/02/2023 10:08

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2428455	EPA 8321B	2,4-D	0.0020	U	ug/L	P433321	
		Acesulfame K	0.10	U	ug/L	P433416	
		2,4,5-T	0.0040	U	ug/L	P433321	
		AMPA	0.10	U	ug/L	P433416	
		Acetaminophen	0.0080	U	ug/L	P433321	
		Acetamiprid	0.0020	U	ug/L	P433321	
		Endothall	0.25	U	ug/L	P433416	
		Glufosinate	0.10	U	ug/L	P433416	
		Glyphosate	0.10	U	ug/L	P433416	
		Afidopyropen	0.0020	U	ug/L	P433321	
		Sucralose	0.023	I	ug/L	P433416	
		Bentazon	8.0E-04	U	ug/L	P433321	MS
		Benzovindiflupyr	0.0020	U	ug/L	P433321	
		Carbamazepine	8.0E-04	U	ug/L	P433321	
		Clothianidin	0.0020	U	ug/L	P433321	
		Dinotefuran	0.0020	U	ug/L	P433321	
		Diuron	0.0020	U	ug/L	P433321	MS, RPD
		Fenuron	0.032	U	ug/L	P433321	
		Fluridone	8.0E-04	U	ug/L	P433321	
		Imazapyr	0.0040	U	ug/L	P433321	
		Hydrocodone	0.0020	U	ug/L	P433321	
		Ibuprofen	0.080	U	ug/L	P433321	
		Imidacloprid	0.0020	U	ug/L	P433321	
		Linuron	0.0040	U	ug/L	P433321	
		Mandestrobin	0.0020	U	ug/L	P433321	
		MCPP	0.0020	U	ug/L	P433321	
		Naproxen	0.0080	U	ug/L	P433321	
		Primidone	0.0040	U	ug/L	P433321	
		Pyraclostrobin	0.0020	U	ug/L	P433321	
		Silvex	0.0040	U	ug/L	P433321	
		Thiamethoxam	0.0020	U	ug/L	P433321	
		Tolfenpyrad	0.0020	U	ug/L	P433321	
		Triclopyr	0.0040	U	ug/L	P433321	
2428457	EPA 200.7 Rev. 4.4	Calcium	2.36		mg/L	P433459	
		Iron	3.35E+03		ug/L	P433459	
		Magnesium	1.19		mg/L	P433459	
		Potassium	0.65	I	mg/L	P433459	
		Sodium	1.9	I	mg/L	P433459	
		Strontium	12.8		ug/L	P433459	
		Tin	3.0	U	ug/L	P433459	
		Titanium	1.2	I	ug/L	P433459	
		Vanadium	2.0	U	ug/L	P433459	
		Zinc	5.0	U	ug/L	P433459	
	EPA 200.8 Rev. 5.4	Aluminum	125		ug/L	P433459	

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2428457	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P433459	
		Arsenic	1.69		ug/L	P433459	
		Barium	28.0		ug/L	P433459	
		Beryllium	0.087		ug/L	P433459	
		Boron	9.5		ug/L	P433459	
		Cadmium	0.020	U	ug/L	P433459	
		Chromium	0.40	U	ug/L	P433459	
		Cobalt	1.87		ug/L	P433459	
		Copper	0.40	U	ug/L	P433459	
		Lead	0.44		ug/L	P433459	
		Manganese	173		ug/L	P433459	
		Molybdenum	0.15	U	ug/L	P433459	
		Nickel	1.2	I	ug/L	P433459	
		Selenium	0.20	U	ug/L	P433459	
		Silver	0.010	U	ug/L	P433459	
		Thallium	0.10	U	ug/L	P433459	
	SM 2340 B-2011	Hardness	10.8		mg/L	P433459	

Sample Location: BAGGETT CREEK UPSTREAM OF HWY 90

Collection Date/Time: 08/02/2023 11:37

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2428454	EPA 8270E	Aldrin	0.68	U	ng/L	P433371	
		Alpha-BHC	0.11	U	ng/L	P433371	
		Alpha-Chlordane	0.21	U	ng/L	P433371	
		PCB-1016	2.1	U	ng/L	P433371	
		Beta-BHC	0.11	U	ng/L	P433371	
		PCB-1221	2.1	U	ng/L	P433371	
		Beta-Cyfluthrin	1.3	U	ng/L	P433371	
		PCB-1232	2.1	U	ng/L	P433371	
		Bifenthrin	0.53	U	ng/L	P433371	
		PCB-1242	2.1	U	ng/L	P433371	
		Carbophenothion	0.95	U	ng/L	P433371	
		PCB-1248	2.1	U	ng/L	P433371	
		Chlorothalonil	3.8	U	ng/L	P433371	MS
		PCB-1254	2.1	U	ng/L	P433371	
		Cis-Nonachlor	0.21	U	ng/L	P433371	
		PCB-1260	2.1	U	ng/L	P433371	
		Cypermethrin	1.6	U	ng/L	P433371	
		Dacthal	0.16	U	ng/L	P433371	
		DDD-p,p'	0.26	U	ng/L	P433371	
		DDE-p,p'	0.21	U	ng/L	P433371	
		DDT-p,p'	0.84	U	ng/L	P433371	
		Delta-BHC	0.42	U	ng/L	P433371	
		Deltamethrin	1.3	U	ng/L	P433371	
		Dichlobenil	0.26	U	ng/L	P433371	
		Dicofol	1.3	U	ng/L	P433371	
		Dieldrin	0.42	U	ng/L	P433371	
		Endosulfan I	0.42	U	ng/L	P433371	
		Endosulfan II	0.95	U	ng/L	P433371	
		Endosulfan Sulfate	0.32	U	ng/L	P433371	
		Endrin	0.95	U	ng/L	P433371	
		Endrin Aldehyde	0.79	U	ng/L	P433371	
		Endrin Ketone	0.42	U	ng/L	P433371	
		Esfenvalerate	0.79	U	ng/L	P433371	
		Ethalfuralin	0.16	U	ng/L	P433371	
		Fenpropathrin	0.26	U	ng/L	P433371	
		Gamma-BHC	0.13	U	ng/L	P433371	
		Gamma-Chlordane	0.21	U	ng/L	P433371	
		Heptachlor	0.21	U	ng/L	P433371	
		Heptachlor Epoxide	0.26	U	ng/L	P433371	
		Hexachlorobenzene**	1.1	U	ng/L	P433371	
		Kepone	14	UJ	ng/L	P433371	CCV
		Lambda-Cyhalothrin	0.79	U	ng/L	P433371	
		Methoprene	0.79	U	ng/L	P433371	
		Methoxychlor	0.32	U	ng/L	P433371	

EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

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

Collection Date/Time: 08/02/2023 11:54

Field ID: G4NW0357

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2428456	EPA 8321B	2,4-D	0.0020	U	ug/L	P433321	
		Acesulfame K	0.10	U	ug/L	P433416	
		2,4,5-T	0.0040	U	ug/L	P433321	
		AMPA	0.10	U	ug/L	P433416	
		Acetaminophen	0.0080	U	ug/L	P433321	
		Acetamiprid	0.0020	U	ug/L	P433321	
		Endothall	0.25	U	ug/L	P433416	
		Glufosinate	0.10	U	ug/L	P433416	
		Glyphosate	0.10	U	ug/L	P433416	
		Afidopyropen	0.0020	U	ug/L	P433321	
		Sucralose	0.19		ug/L	P433416	
		Bentazon	8.0E-04	U	ug/L	P433321	MS
		Benzovindiflupyr	0.0020	U	ug/L	P433321	
		Carbamazepine	8.0E-04	U	ug/L	P433321	
		Clothianidin	0.0020	U	ug/L	P433321	
		Dinotefuran	0.0020	U	ug/L	P433321	
		Diuron	0.0020	U	ug/L	P433321	MS, RPD
		Fenuron	0.032	U	ug/L	P433321	
		Fluridone	8.0E-04	U	ug/L	P433321	
		Imazapyr	0.0040	U	ug/L	P433321	
		Hydrocodone	0.0020	U	ug/L	P433321	
		Ibuprofen	0.080	U	ug/L	P433321	
		Imidacloprid	0.0053	I	ug/L	P433321	
		Linuron	0.0040	U	ug/L	P433321	
		Mandestrobin	0.0020	U	ug/L	P433321	
		MCPP	0.0020	U	ug/L	P433321	
		Naproxen	0.0080	U	ug/L	P433321	
		Primidone	0.0040	U	ug/L	P433321	
		Pyraclostrobin	0.0020	U	ug/L	P433321	
		Silvex	0.0040	U	ug/L	P433321	
		Thiamethoxam	0.0020	U	ug/L	P433321	
		Tolfenpyrad	0.0020	U	ug/L	P433321	
		Triclopyr	0.0040	U	ug/L	P433321	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P433459

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: P433459

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
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 8270E

Batch ID: P433371

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
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	3.6	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P433371

Component	Result	Code	Units
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
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P433371

Component	Result	Code	Units
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

Reference Method: EPA 8276

Batch ID: P433371

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8276

Batch ID: P433371

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

Reference Method: EPA 8321B

Batch ID: P433321

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: P433416

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: P433459

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

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P433459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.3		P	85 - 115
Antimony	99.5		P	85 - 115
Arsenic	98.3		P	85 - 115
Barium	101		P	85 - 115
Beryllium	97.3		P	85 - 115
Boron	104		P	85 - 115
Cadmium	99.8		P	85 - 115
Chromium	99.3		P	85 - 115
Cobalt	102		P	85 - 115
Copper	95.4		P	85 - 115
Lead	95.3		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	98.5		P	85 - 115
Nickel	101		P	85 - 115
Selenium	97.8		P	85 - 115
Silver	114		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P433371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	46.2		P	30 - 96.0
Alpha-BHC	83.3		P	70 - 109
Alpha-Chlordane	61.5		P	45 - 107
Beta-BHC	73.3		P	64 - 138
Beta-Cyfluthrin	68.1		P	17 - 141
Bifenthrin	48.3		P	10 - 113
Carbophenothion	47.6		P	24 - 91.0
Chlorothalonil	68.0		P	26 - 180
Cis-Nonachlor	59.6		P	37 - 102
Cypermethrin	59.3		P	20 - 133
Dacthal	71.1		P	69 - 114
DDD-p,p'	59.2		P	42 - 105
DDE-p,p'	62.8		P	42 - 106
DDT-p,p'	69.2		P	42 - 107
Delta-BHC	73.1		P	67 - 144

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P433371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Deltamethrin	87.9		P	15 - 149
Dichlobenil	61.4		P	46 - 117
Dicofol	64.5		P	34 - 114
Dieldrin	62.6		P	50 - 108
Endosulfan I	66.0		P	55 - 104
Endosulfan II	62.0		P	51 - 111
Endosulfan Sulfate	60.2		P	56 - 121
Endrin	63.5		P	10 - 106
Endrin Aldehyde	70.3		P	34 - 114
Endrin Ketone	78.5		P	63 - 177
Esfenvalerate	67.1		P	29 - 143
Ethalfuralin	55.9		P	46 - 96.0
Fenpropathrin	69.7		P	28 - 115
Gamma-BHC	67.0		P	65 - 121
Gamma-Chlordane	51.8		P	39 - 103
Heptachlor	54.4		P	39 - 94.0
Heptachlor Epoxide	63.4		P	54 - 104
Hexachlorobenzene	52.1		P	36 - 100
Kepone	134		P	10 - 225
Lambda-Cyhalothrin	55.7		P	10 - 135
Methoprene	49.4		P	10 - 109
Methoxychlor	75.6		P	52 - 112
MGK-264	63.5		P	44 - 117
Mirex	53.4		P	20 - 90.0
Oxychlordane	56.8		P	44 - 102
PCB-1016	74.5		P	45 - 107
PCB-1260	72.4		P	40 - 118
Permethrin	63.5		P	18 - 135
Phenothrin	49.7		P	10 - 102
Piperonyl Butoxide	97.3		P	28 - 156
Prallethrin	77.0		P	28 - 113
Tau-Fluvalinate	64.9		P	10 - 123
Tetramethrin	88.5		P	18 - 158
Trans-Nonachlor	55.4		P	39 - 104
Triclosan Methyl	66.0		P	54 - 108
Trifluralin	69.0		P	46 - 97.0

Reference Method: EPA 8276
Batch ID: P433371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	85.6		P	52 - 117
Toxaphene	103		P	44 - 125

Reference Method: EPA 8321B
Batch ID: P433321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.3		P	40 - 150
2,4,5-T	80.8		P	40 - 150
Acetaminophen	87.3		P	30 - 150
Acetamiprid	93.4		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P433321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Afidopyropen	78.9		P	30 - 150
Bentazon	137		P	30 - 150
Benzovindiflupyr	88.3		P	40 - 150
Carbamazepine	66.2		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	114		P	40 - 150
Diuron	63.2		P	40 - 150
Fenuron	94.7		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	97.6		P	40 - 150
Ibuprofen	72.2		P	40 - 150
Imazapyr	77.6		P	40 - 150
Imidacloprid	86.8		P	40 - 150
Linuron	73.7		P	40 - 150
Mandestrobin	95.5		P	40 - 150
MCPP	90.8		P	40 - 150
Naproxen	76.1		P	40 - 150
Primidone	79.2		P	40 - 150
Pyraclostrobin	71.5		P	40 - 150
Silvex	89.4		P	40 - 150
Thiamethoxam	99.0		P	40 - 150
Tolfenpyrad	44.3		P	30 - 150
Triclopyr	82.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P433416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.2		P	40 - 150
AMPA	74.6		P	40 - 150
Endothall	93.3		P	40 - 150
Glufosinate	86.6		P	40 - 150
Glyphosate	97.1		P	40 - 150
Sucralose	85.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P433459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428385	Calcium	104		P	80 - 120
2428385	Iron	106	104	P/P	80 - 120
2428385	Magnesium	102	100	P/P	80 - 120
2428385	Potassium	100	100	P/P	80 - 120
2428385	Sodium	103		P	80 - 120
2428385	Strontium	100	99.2	P/P	80 - 120
2428385	Tin	104	105	P/P	80 - 120
2428385	Titanium	104	101	P/P	80 - 120
2428385	Vanadium	106	103	P/P	80 - 120
2428385	Zinc	106	102	P/P	80 - 120
2428696	Calcium	107		P	80 - 120
2428696	Iron	108		P	80 - 120
2428696	Magnesium	108		P	80 - 120
2428696	Potassium	103		P	80 - 120
2428696	Sodium	103		P	80 - 120
2428696	Strontium	101		P	80 - 120
2428696	Tin	106		P	80 - 120
2428696	Titanium	102		P	80 - 120
2428696	Vanadium	103		P	80 - 120
2428696	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P433459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428385	Aluminum	97.2	97.9	P/P	80 - 120
2428385	Antimony	101	101	P/P	80 - 120
2428385	Arsenic	99.6	99.1	P/P	80 - 120
2428385	Barium	100	101	P/P	80 - 120
2428385	Beryllium	93.3	98.4	P/P	80 - 120
2428385	Boron	101	105	P/P	80 - 120
2428385	Cadmium	102	102	P/P	80 - 120
2428385	Chromium	98.5	99.7	P/P	80 - 120
2428385	Cobalt	98.5	99.9	P/P	80 - 120
2428385	Copper	95.4	96.2	P/P	80 - 120
2428385	Lead	95.9	96.7	P/P	80 - 120
2428385	Manganese	98.2	101	P/P	80 - 120
2428385	Molybdenum	100	99.6	P/P	80 - 120
2428385	Nickel	94.9	96.7	P/P	80 - 120
2428385	Selenium	95.1	95.4	P/P	80 - 120
2428385	Silver	112	113	P/P	80 - 120
2428385	Thallium	103	105	P/P	80 - 120
2428696	Aluminum	98.0		P	80 - 120
2428696	Antimony	99.7		P	80 - 120
2428696	Arsenic	97.4		P	80 - 120
2428696	Barium	102		P	80 - 120
2428696	Beryllium	91.6		P	80 - 120
2428696	Boron	103		P	80 - 120
2428696	Cadmium	99.9		P	80 - 120
2428696	Chromium	99.3		P	80 - 120
2428696	Cobalt	101		P	80 - 120
2428696	Copper	94.1		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P433459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428696	Lead	96.0		P	80 - 120
2428696	Manganese	102		P	80 - 120
2428696	Molybdenum	97.0		P	80 - 120
2428696	Nickel	95.3		P	80 - 120
2428696	Selenium	96.2		P	80 - 120
2428696	Silver	112		P	80 - 120
2428696	Thallium	102		P	80 - 120

Reference Method: EPA 8270E

Batch ID: P433371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428122	Aldrin	43.8	46.3	P/P	24 - 81.0
2428122	Alpha-BHC	87.3	87.6	P/P	65 - 110
2428122	Alpha-Chlordane	64.0	63.9	P/P	43 - 119
2428122	Beta-BHC	76.6	87.4	P/P	54 - 165
2428122	Beta-Cyfluthrin	63.6	71.3	P/P	27 - 165
2428122	Bifenthrin	48.4	46.6	P/P	17 - 117
2428122	Carbophenothion	44.5	45.9	P/P	21 - 108
2428122	Chlorothalonil	4.75	5.70	F/F	10 - 255
2428122	Cis-Nonachlor	58.7	63.8	P/P	34 - 98.0
2428122	Cypermethrin	64.9	64.3	P/P	25 - 143
2428122	Dacthal	70.5	79.2	P/P	55 - 139
2428122	DDD-p,p'	55.9	57.4	P/P	30 - 109
2428122	DDE-p,p'	63.9	65.9	P/P	35 - 106
2428122	DDT-p,p'	64.0	66.7	P/P	41 - 101
2428122	Delta-BHC	76.6	84.4	P/P	58 - 165
2428122	Deltamethrin	89.1	98.2	P/P	10 - 194
2428122	Dichlobenil	30.7	38.0	P/P	22 - 114
2428122	Dicofol	63.2	77.0	P/P	17 - 133
2428122	Dieldrin	63.2	68.6	P/P	45 - 129
2428122	Endosulfan I	69.5	72.9	P/P	49 - 104
2428122	Endosulfan II	50.9	52.0	P/P	37 - 117
2428122	Endosulfan Sulfate	47.4	52.5	P/P	38 - 128
2428122	Endrin	68.2	72.0	P/P	35 - 116
2428122	Endrin Aldehyde	56.7	58.9	P/P	19 - 108
2428122	Endrin Ketone	81.2	83.6	P/P	44 - 134
2428122	Esfenvalerate	69.4	76.0	P/P	27 - 176
2428122	Ethalfuralin	57.1	69.3	P/P	49 - 100
2428122	Fenpropathrin	67.0	76.3	P/P	34 - 117
2428122	Gamma-BHC	63.3	72.4	P/P	59 - 129
2428122	Gamma-Chlordane	47.1	47.8	P/P	33 - 107
2428122	Heptachlor	56.2	64.4	P/P	37 - 94.0
2428122	Heptachlor Epoxide	68.3	74.4	P/P	38 - 118
2428122	Hexachlorobenzene	37.8	44.0	P/P	35 - 97.0
2428122	Kepone	122	142	P/P	10 - 221
2428122	Lambda-Cyhalothrin	56.0	62.8	P/P	23 - 190
2428122	Methoprene	45.2	44.5	P/P	21 - 109
2428122	Methoxychlor	66.0	71.4	P/P	46 - 118
2428122	MGK-264	24.6	27.2	F/F	39 - 122
2428122	Mirex	58.8	63.8	P/P	25 - 90.0
2428122	Oxychlordane	61.8	62.1	P/P	42 - 100

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P433371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428122	Permethrin	57.2	61.0	P/P	33 - 181
2428122	Phenothrin	57.1	54.8	P/P	12 - 125
2428122	Piperonyl Butoxide	92.9	108	P/P	10 - 178
2428122	Prallethrin	87.8	88.9	P/P	24 - 122
2428122	Tau-Fluvalinate	71.1	83.2	P/P	13 - 151
2428122	Tetramethrin	86.4	92.6	P/P	16 - 172
2428122	Trans-Nonachlor	47.7	42.4	P/P	39 - 100
2428122	Triclosan Methyl	65.8	66.7	P/P	43 - 110
2428122	Trifluralin	68.8	70.3	P/P	45 - 94.0
2428871	PCB-1016	74.2	64.8	P/P	45 - 107
2428871	PCB-1260	71.6	66.2	P/P	40 - 112

Reference Method: EPA 8276

Batch ID: P433371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428871	Chlordane	96.5	85.2	P/P	43 - 123
2428871	Toxaphene	113	105	P/P	27 - 156

Reference Method: EPA 8321B

Batch ID: P433321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427704	2,4-D	88.2	95.9	P/P	40 - 150
2427704	2,4,5-T	90.9	102	P/P	40 - 150
2427704	Acetaminophen	104	98.3	P/P	30 - 150
2427704	Acetamiprid	71.7	70.5	P/P	40 - 150
2427704	Afidopyropen	75.4	75.7	P/P	30 - 150
2427704	Bentazon	159	153	F/F	30 - 150
2427704	Benzovindiflupyr	77.9	77.7	P/P	40 - 150
2427704	Carbamazepine	56.9	54.2	P/P	40 - 150
2427704	Clothianidin	115	102	P/P	40 - 150
2427704	Dinotefuran	104	86.7	P/P	40 - 150
2427704	Diuron	26.8	47.0	F/P	40 - 150
2427704	Fenuron	75.5	70.4	P/P	40 - 150
2427704	Fluridone	91.6	86.4	P/P	40 - 150
2427704	Hydrocodone	77.7	74.9	P/P	40 - 150
2427704	Ibuprofen	76.1	77.3	P/P	40 - 150
2427704	Imazapyr	83.6	85.1	P/P	40 - 150
2427704	Imidacloprid	124	120	P/P	40 - 150
2427704	Linuron	55.4	58.9	P/P	40 - 150
2427704	Mandestrobin	85.1	86.8	P/P	40 - 150
2427704	MCPP	97.6	103	P/P	40 - 150
2427704	Naproxen	62.7	70.6	P/P	40 - 150
2427704	Primidone	88.6	87.4	P/P	40 - 150
2427704	Pyraclostrobin	75.0	78.3	P/P	40 - 150
2427704	Silvex	108	101	P/P	40 - 150
2427704	Thiamethoxam	104	96.6	P/P	40 - 150
2427704	Tolfenpyrad	51.0	54.3	P/P	30 - 150
2427704	Triclopyr	91.4	94.2	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P433416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428009	Acesulfame K	113	121	P/P	40 - 150
2428009	AMPA	64.2	62.1	P/P	40 - 150
2428009	Endothall	102	97.4	P/P	40 - 150
2428009	Glufosinate	92.7	78.5	P/P	40 - 150
2428009	Glyphosate	90.6	96.6	P/P	40 - 150
2428009	Sucralose	84.5	87.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P433459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428385	Calcium	0.110	Spike	P	0 - 20
2428385	Iron	1.52	Spike	P	0 - 20
2428385	Magnesium	1.23	Spike	P	0 - 20
2428385	Potassium	0.0155	Spike	P	0 - 20
2428385	Sodium	0.501	Spike	P	0 - 20
2428385	Strontium	0.690	Spike	P	0 - 20
2428385	Tin	1.31	Spike	P	0 - 20
2428385	Titanium	2.98	Spike	P	0 - 20
2428385	Vanadium	3.02	Spike	P	0 - 20
2428385	Zinc	3.19	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P433459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428385	Aluminum	0.687	Spike	P	0 - 20
2428385	Antimony	0.636	Spike	P	0 - 20
2428385	Arsenic	0.482	Spike	P	0 - 20
2428385	Barium	0.756	Spike	P	0 - 20
2428385	Beryllium	5.33	Spike	P	0 - 20
2428385	Boron	2.58	Spike	P	0 - 20
2428385	Cadmium	0.166	Spike	P	0 - 20
2428385	Chromium	1.21	Spike	P	0 - 20
2428385	Cobalt	1.38	Spike	P	0 - 20
2428385	Copper	0.919	Spike	P	0 - 20
2428385	Lead	0.869	Spike	P	0 - 20
2428385	Manganese	2.15	Spike	P	0 - 20
2428385	Molybdenum	0.352	Spike	P	0 - 20
2428385	Nickel	1.86	Spike	P	0 - 20
2428385	Selenium	0.326	Spike	P	0 - 20
2428385	Silver	0.369	Spike	P	0 - 20
2428385	Thallium	1.22	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P433371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428122	Aldrin	5.64	Spike	P	0 - 41
2428122	Alpha-BHC	0.302	Spike	P	0 - 25
2428122	Alpha-Chlordane	0.132	Spike	P	0 - 32
2428122	Beta-BHC	13.2	Spike	P	0 - 33
2428122	Beta-Cyfluthrin	11.5	Spike	P	0 - 43
2428122	Bifenthrin	3.77	Spike	P	0 - 52
2428122	Carbophenothion	3.19	Spike	P	0 - 49
2428122	Chlorothalonil	18.1	Spike	P	0 - 82
2428122	Cis-Nonachlor	8.33	Spike	P	0 - 33
2428122	Cypermethrin	0.853	Spike	P	0 - 51
2428122	Dacthal	11.7	Spike	P	0 - 27
2428122	DDD-p,p'	2.55	Spike	P	0 - 39

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P433371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428122	DDE-p,p'	3.01	Spike	P	0 - 31
2428122	DDT-p,p'	4.18	Spike	P	0 - 29
2428122	Delta-BHC	9.67	Spike	P	0 - 35
2428122	Deltamethrin	9.67	Spike	P	0 - 100
2428122	Dichlobenil	21.3	Spike	P	0 - 40
2428122	Dicofol	19.7	Spike	P	0 - 37
2428122	Dieldrin	8.09	Spike	P	0 - 27
2428122	Endosulfan I	4.82	Spike	P	0 - 23
2428122	Endosulfan II	2.02	Spike	P	0 - 34
2428122	Endosulfan Sulfate	10.3	Spike	P	0 - 36
2428122	Endrin	5.33	Spike	P	0 - 45
2428122	Endrin Aldehyde	3.78	Spike	P	0 - 76
2428122	Endrin Ketone	2.89	Spike	P	0 - 43
2428122	Esfenvalerate	9.13	Spike	P	0 - 51
2428122	Ethalfuralin	19.4	Spike	P	0 - 22
2428122	Fenpropathrin	13.0	Spike	P	0 - 49
2428122	Gamma-BHC	13.4	Spike	P	0 - 28
2428122	Gamma-Chlordane	1.43	Spike	P	0 - 40
2428122	Heptachlor	13.6	Spike	P	0 - 29
2428122	Heptachlor Epoxide	8.52	Spike	P	0 - 33
2428122	Hexachlorobenzene	15.1	Spike	P	0 - 36
2428122	Kepone	15.1	Spike	P	0 - 85
2428122	Lambda-Cyhalothrin	11.5	Spike	P	0 - 55
2428122	Methoprene	1.43	Spike	P	0 - 53
2428122	Methoxychlor	7.92	Spike	P	0 - 50
2428122	MGK-264	9.96	Spike	P	0 - 43
2428122	Mirex	8.11	Spike	P	0 - 40
2428122	Oxychlordane	0.600	Spike	P	0 - 31
2428122	Permethrin	6.46	Spike	P	0 - 50
2428122	Phenothrin	4.02	Spike	P	0 - 58
2428122	Piperonyl Butoxide	15.3	Spike	P	0 - 100
2428122	Prallethrin	1.20	Spike	P	0 - 39
2428122	Tau-Fluvalinate	15.7	Spike	P	0 - 54
2428122	Tetramethrin	6.94	Spike	P	0 - 51
2428122	Trans-Nonachlor	11.8	Spike	P	0 - 39
2428122	Triclosan Methyl	1.38	Spike	P	0 - 31
2428122	Trifluralin	2.15	Spike	P	0 - 22
2428871	PCB-1016	13.5	Spike	P	0 - 25
2428871	PCB-1260	7.90	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P433371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428871	Chlordane	12.4	Spike	P	0 - 28
2428871	Toxaphene	7.14	Spike	P	0 - 27

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P433321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427704	2,4-D	8.37	Spike	P	0 - 30
2427704	2,4,5-T	11.7	Spike	P	0 - 30
2427704	Acetaminophen	5.21	Spike	P	0 - 30
2427704	Acetamiprid	1.59	Spike	P	0 - 30
2427704	Afidopyropen	0.494	Spike	P	0 - 30
2427704	Bentazon	3.94	Spike	P	0 - 30
2427704	Benzovindiflupyr	0.209	Spike	P	0 - 30
2427704	Carbamazepine	4.86	Spike	P	0 - 30
2427704	Clothianidin	12.0	Spike	P	0 - 30
2427704	Dinotefuran	17.7	Spike	P	0 - 30
2427704	Diuron	54.7	Spike	F	0 - 30
2427704	Fenuron	7.00	Spike	P	0 - 30
2427704	Fluridone	5.83	Spike	P	0 - 30
2427704	Hydrocodone	3.60	Spike	P	0 - 30
2427704	Ibuprofen	1.65	Spike	P	0 - 30
2427704	Imazapyr	1.53	Spike	P	0 - 30
2427704	Imidacloprid	3.22	Spike	P	0 - 30
2427704	Linuron	6.05	Spike	P	0 - 30
2427704	Mandestrobin	2.00	Spike	P	0 - 30
2427704	MCPP	5.49	Spike	P	0 - 30
2427704	Naproxen	11.9	Spike	P	0 - 30
2427704	Primidone	1.33	Spike	P	0 - 30
2427704	Pyraclostrobin	4.30	Spike	P	0 - 30
2427704	Silvex	6.40	Spike	P	0 - 30
2427704	Thiamethoxam	7.56	Spike	P	0 - 30
2427704	Tolfenpyrad	6.16	Spike	P	0 - 30
2427704	Triclopyr	3.01	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P433416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428009	Acesulfame K	6.32	Spike	P	0 - 30
2428009	AMPA	3.05	Spike	P	0 - 30
2428009	Endothall	4.58	Spike	P	0 - 30
2428009	Glufosinate	16.5	Spike	P	0 - 30
2428009	Glyphosate	5.25	Spike	P	0 - 30
2428009	Sucralose	3.04	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2428454

Field Sample ID: G4NW0336

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	59.4	P	37 - 129
EPA 8270E	Decachlorobiphenyl	58.6	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	50.2	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	65.0	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	60.7	P	28 - 102
EPA 8276	PCNB	62.7	P	49 - 115

Lab Sample ID: 2428455

Field Sample ID: G4NW0395

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.3	P	30 - 160
EPA 8321B	Diuron-d6	38.1	P	30 - 160
EPA 8321B	Endothall-d6	94.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.3	P	30 - 160
EPA 8321B	Primidone-d5	77.0	P	30 - 160
EPA 8321B	Sucralose-d6	85.7	P	30 - 160

Lab Sample ID: 2428456

Field Sample ID: G4NW0357

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.0	P	30 - 160
EPA 8321B	Diuron-d6	44.8	P	30 - 160
EPA 8321B	Endothall-d6	94.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	58.2	P	30 - 160
EPA 8321B	Primidone-d5	70.4	P	30 - 160
EPA 8321B	Sucralose-d6	95.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A120882

Included Lab Sample IDs: 2428457, 2428458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	108	P/P	90 - 110
Iron	106	107	P/P	90 - 110
Magnesium	106	107	P/P	90 - 110
Potassium	103	105	P/P	90 - 110
Sodium	104	107	P/P	90 - 110
Strontium	98.6	101	P/P	90 - 110
Tin	102	104	P/P	90 - 110
Titanium	101	103	P/P	90 - 110
Vanadium	101	102	P/P	90 - 110
Zinc	102	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A120884

Included Lab Sample IDs: 2428457, 2428458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.0	97.3	P/P	90 - 110
Antimony	99.3	99.3	P/P	90 - 110
Arsenic	97.0	97.4	P/P	90 - 110
Barium	97.8	99.8	P/P	90 - 110
Beryllium	97.0	97.3	P/P	90 - 110
Boron	101	96.0	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Cobalt	100	99.7	P/P	90 - 110
Copper	92.0	92.1	P/P	90 - 110
Lead	94.9	95.6	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Molybdenum	98.2	97.7	P/P	90 - 110
Nickel	96.6	96.5	P/P	90 - 110
Selenium	99.0	98.9	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	99.9	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A120886

Included Lab Sample IDs: 2428455, 2428456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.8	100	P/P	60 - 160
Sucralose	81.8	78.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A120887

Included Lab Sample IDs: 2428455, 2428456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	122	P/P	60 - 160
Endothall	98.2	101	P/P	60 - 160
Glufosinate	82.2	86.0	P/P	60 - 160
Glyphosate	99.4	100	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A120912
Included Lab Sample IDs: 2428454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	97.1		P	80 - 120
PCB-1260	93.9		P	80 - 120

Reference Method: EPA 8321B
Run ID: A120922
Included Lab Sample IDs: 2428455, 2428456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.5	79.4	P/P	50 - 150
2,4,5-T	82.1	93.1	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 160
Acetamiprid	108	108	P/P	50 - 150
Afidopyropen	91.5	111	P/P	50 - 150
Bentazon	103	103	P/P	50 - 160
Benzovindiflupyr	115	107	P/P	50 - 150
Carbamazepine	104	109	P/P	60 - 150
Clothianidin	99.9	108	P/P	60 - 150
Dinotefuran	117	105	P/P	50 - 150
Diuron	109	107	P/P	60 - 160
Fenuron	105	104	P/P	60 - 150
Fluridone	127	116	P/P	60 - 160
Hydrocodone	114	106	P/P	60 - 150
Ibuprofen	90.0	91.4	P/P	50 - 160
Imazapyr	88.6	92.8	P/P	50 - 150
Imidacloprid	97.4	96.6	P/P	60 - 150
Linuron	98.0	89.6	P/P	60 - 150
Mandestrobin	113	109	P/P	50 - 150
MCPP	91.1	93.9	P/P	50 - 150
Naproxen	78.4	83.9	P/P	50 - 160
Primidone	103	103	P/P	60 - 150
Pyraclostrobin	108	112	P/P	60 - 150
Silvex	96.8	101	P/P	50 - 150
Thiamethoxam	115	102	P/P	50 - 150
Tolfenpyrad	98.5	105	P/P	60 - 150
Triclopyr	104	90.7	P/P	50 - 150

Reference Method: EPA 8276
Run ID: A120944
Included Lab Sample IDs: 2428454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	107		P	80 - 120
Toxaphene	108		P	80 - 120

Reference Method: EPA 8270E
Run ID: A121012
Included Lab Sample IDs: 2428454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	93.8		P	80 - 120
Alpha-BHC	99.2		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A121012
Included Lab Sample IDs: 2428454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alpha-Chlordane	97.4		P	80 - 120
Beta-BHC	93.0		P	80 - 120
Beta-Cyfluthrin	101		P	80 - 120
Bifenthrin	98.7		P	80 - 120
Carbophenothion	99.1		P	80 - 120
Chlorothalonil	98.7		P	80 - 120
Cis-Nonachlor	93.1		P	80 - 120
Cypermethrin	101		P	80 - 120
Dacthal	94.4		P	80 - 120
DDD-p,p'	93.5		P	80 - 120
DDE-p,p'	98.6		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	92.6		P	80 - 120
Deltamethrin	99.3		P	80 - 120
Dichlobenil	91.8		P	80 - 120
Dicofol	92.8		P	80 - 120
Dieldrin	96.8		P	80 - 120
Endosulfan I	97.4		P	80 - 120
Endosulfan II	98.3		P	80 - 120
Endosulfan Sulfate	97.1		P	80 - 120
Endrin	97.7		P	80 - 120
Endrin Aldehyde	94.4		P	80 - 120
Endrin Ketone	97.1		P	80 - 120
Esfenvalerate	99.8		P	80 - 120
Ethalfuralin	97.3		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	93.5		P	80 - 120
Gamma-Chlordane	96.8		P	80 - 120
Heptachlor	99.9		P	80 - 120
Heptachlor Epoxide	96.8		P	80 - 120
Hexachlorobenzene	94.8		P	80 - 120
Kepone	65.9*		F	80 - 120
Lambda-Cyhalothrin	100		P	80 - 120
Methoprene	96.4		P	80 - 120
Methoxychlor	98.0		P	80 - 120
MGK-264	97.8		P	80 - 120
Mirex	98.6		P	80 - 120
Oxychlordane	97.8		P	80 - 120
Permethrin	99.3		P	80 - 120
Phenothrin	93.8		P	80 - 120
Piperonyl Butoxide	93.3		P	80 - 120
Prallethrin	96.7		P	80 - 120
Tau-Fluvalinate	101		P	80 - 120
Tetramethrin	96.2		P	80 - 120
Trans-Nonachlor	98.3		P	80 - 120
Triclosan Methyl	95.9		P	80 - 120
Trifluralin	97.5		P	80 - 120

* 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	108	104	107				0.110
	Iron	108	106	104	108			1.52
	Magnesium	108	102	100	108			1.23
	Potassium	104	100	100	103			0.0155
	Sodium	107	103	103				0.501
	Strontium	103	100	99.2	101			0.690
	Tin	106	104	105	106			1.31
	Titanium	105	104	101	102			2.98
	Vanadium	106	106	103	103			3.02
	Zinc	108	106	102	106			3.19
EPA 200.8 Rev. 5.4	Aluminum	99.3	97.2	97.9	98.0			0.687
	Antimony	99.5	101	101	99.7			0.636
	Arsenic	98.3	99.6	99.1	97.4			0.482
	Barium	101	100	101	102			0.756
	Beryllium	97.3	93.3	98.4	91.6			5.33
	Boron	104	101	105	103			2.58
	Cadmium	99.8	102	102	99.9			0.166
	Chromium	99.3	98.5	99.7	99.3			1.21
	Cobalt	102	98.5	99.9	101			1.38
	Copper	95.4	95.4	96.2	94.1			0.919
	Lead	95.3	95.9	96.7	96.0			0.869
	Manganese	101	98.2	101	102			2.15
	Molybdenum	98.5	100	99.6	97.0			0.352
	Nickel	101	94.9	96.7	95.3			1.86
	Selenium	97.8	95.1	95.4	96.2			0.326
	Silver	114	112	113	112			0.369
	Thallium	101	103	105	102			1.22
EPA 8270E	Aldrin	46.2	43.8	46.3				5.64
	Alpha-BHC	83.3	87.3	87.6				0.302
	Alpha-Chlordane	61.5	64.0	63.9				0.132
	Beta-BHC	73.3	76.6	87.4				13.2
	Beta-Cyfluthrin	68.1	63.6	71.3				11.5
	Bifenthrin	48.3	48.4	46.6				3.77
	Carbophenothion	47.6	44.5	45.9				3.19
	Chlorothalonil	68.0	4.75	5.70				18.1
	Cis-Nonachlor	59.6	58.7	63.8				8.33
	Cypermethrin	59.3	64.9	64.3				0.853
	Dacthal	71.1	70.5	79.2				11.7
	DDD-p,p'	59.2	55.9	57.4				2.55
	DDE-p,p'	62.8	63.9	65.9				3.01
	DDT-p,p'	69.2	64.0	66.7				4.18
	Delta-BHC	73.1	76.6	84.4				9.67
	Deltamethrin	87.9	89.1	98.2				9.67
	Dichlobenil	61.4	30.7	38.0				21.3
	Dicofol	64.5	63.2	77.0				19.7
	Dieldrin	62.6	63.2	68.6				8.09
	Endosulfan I	66.0	69.5	72.9				4.82
	Endosulfan II	62.0	50.9	52.0				2.02
	Endosulfan Sulfate	60.2	47.4	52.5				10.3
	Endrin	63.5	68.2	72.0				5.33
	Endrin Aldehyde	70.3	56.7	58.9				3.78
	Endrin Ketone	78.5	81.2	83.6				2.89
	Esfenvalerate	67.1	69.4	76.0				9.13
	Ethalfuralin	55.9	57.1	69.3				19.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8270E	Fenpropathrin	69.7	67.0	76.3			13.0
	Gamma-BHC	67.0	63.3	72.4			13.4
	Gamma-Chlordane	51.8	47.1	47.8			1.43
	Heptachlor	54.4	56.2	64.4			13.6
	Heptachlor Epoxide	63.4	68.3	74.4			8.52
	Hexachlorobenzene	52.1	37.8	44.0			15.1
	Kepone	134	122	142			15.1
	Lambda-Cyhalothrin	55.7	56.0	62.8			11.5
	Methoprene	49.4	45.2	44.5			1.43
	Methoxychlor	75.6	66.0	71.4			7.92
	MGK-264	63.5	24.6	27.2			9.96
	Mirex	53.4	58.8	63.8			8.11
	Oxychlordane	56.8	61.8	62.1			0.600
	PCB-1016	74.5	74.2	64.8			13.5
	PCB-1260	72.4	71.6	66.2			7.90
	Permethrin	63.5	57.2	61.0			6.46
	Phenothrin	49.7	57.1	54.8			4.02
	Piperonyl Butoxide	97.3	92.9	108			15.3
	Prallethrin	77.0	87.8	88.9			1.20
	Tau-Fluvalinate	64.9	71.1	83.2			15.7
	Tetramethrin	88.5	86.4	92.6			6.94
	Trans-Nonachlor	55.4	47.7	42.4			11.8
	Triclosan Methyl	66.0	65.8	66.7			1.38
	Trifluralin	69.0	68.8	70.3			2.15
EPA 8276	Chlordane	85.6	96.5	85.2			12.4
	Toxaphene	103	113	105			7.14
EPA 8321B	2,4-D	83.3	88.2	95.9			8.37
	2,4,5-T	80.8	90.9	102			11.7
	Acesulfame K	93.2	113	121			6.32
	Acetaminophen	87.3	104	98.3			5.21
	Acetamiprid	93.4	71.7	70.5			1.59
	Afidopyropen	78.9	75.4	75.7			0.494
	AMPA	74.6	64.2	62.1			3.05
	Bentazon	137	159	153			3.94
	Benzovindiflupyr	88.3	77.9	77.7			0.209
	Carbamazepine	66.2	56.9	54.2			4.86
	Clothianidin	95.4	115	102			12.0
	Dinotefuran	114	104	86.7			17.7
	Diuron	63.2	26.8	47.0			54.7
	Endothall	93.3	102	97.4			4.58
	Fenuron	94.7	75.5	70.4			7.00
	Fluridone	102	91.6	86.4			5.83
	Glufosinate	86.6	92.7	78.5			16.5
	Glyphosate	97.1	90.6	96.6			5.25
	Hydrocodone	97.6	77.7	74.9			3.60
	Ibuprofen	72.2	76.1	77.3			1.65
	Imazapyr	77.6	83.6	85.1			1.53
	Imidacloprid	86.8	124	120			3.22
	Linuron	73.7	55.4	58.9			6.05
	Mandestrobin	95.5	85.1	86.8			2.00
	MCPD	90.8	97.6	103			5.49
	Naproxen	76.1	62.7	70.6			11.9
	Primidone	79.2	88.6	87.4			1.33
	Pyraclostrobin	71.5	75.0	78.3			4.30

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
EPA 8321B	Silvex	89.4	108	101		6.40
	Sucralose	85.4	84.5	87.1		3.04
	Thiamethoxam	99.0	104	96.6		7.56
	Tolfenpyrad	44.3	51.0	54.3		6.16
	Triclopyr	82.4	91.4	94.2		3.01

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	2428457, 2428458
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2428457, 2428458
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2428454
EPA 8270E	PCBs in water matrices by GC/MS/MS	2428454
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2428454
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2428455, 2428456
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2428457, 2428458

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	08/03/2023	08/04/2023 12:20	George D Taylor	08/07/2023 19:54	McKinley C Carter	2428457
	08/03/2023	08/04/2023 12:20	George D Taylor	08/07/2023 20:00	McKinley C Carter	2428458
EPA 200.8 Rev. 5.4	08/03/2023	08/04/2023 12:20	George D Taylor	08/07/2023 19:35	Emily M Philpot	2428457
	08/03/2023	08/04/2023 12:20	George D Taylor	08/07/2023 19:45	Emily M Philpot	2428458
EPA 8270E	08/03/2023	08/07/2023 08:00	Fe-Val Siddell	08/08/2023 22:55	Vandana T. Nagar	2428454
	08/03/2023	08/07/2023 08:00	Fe-Val Siddell	08/10/2023 00:14	Julie Wi	2428454
EPA 8276	08/03/2023	08/07/2023 08:00	Fe-Val Siddell	08/09/2023 15:24	Arthur Maknenko	2428454
EPA 8321B	08/03/2023	08/03/2023 13:00	Hoor Shaik	08/05/2023 10:45	Juyoung Kim	2428455
	08/03/2023	08/03/2023 13:00	Hoor Shaik	08/05/2023 11:03	Juyoung Kim	2428456
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 14:24	Hana Lee	2428455
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 14:37	Hana Lee	2428456
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 22:39	Hana Lee	2428455
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 22:54	Hana Lee	2428456
SM 2340 B-2011	08/03/2023			08/07/2023 19:54	McKinley C Carter	2428457
	08/03/2023			08/07/2023 20:00	McKinley C Carter	2428458