

Chemical Analysis Report

SE-DIST-2023-03-02-01

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

Event Description: **SMP - Vero Beach**
Request ID: **RQ-2023-02-27-36**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Colin Wright, Program Administrator

Date Certified: 20-MAR-2023 13:44

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: Vero North Canal @ 66th Ave

Collection Date/Time: 03/01/2023 09:40

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391308	EPA 8270E	Aldrin	0.66	U	ng/L	P426832	
		Alpha-BHC	0.10	UJ	ng/L	P426832	LCS
		Alpha-Chlordane	0.20	U	ng/L	P426832	
		PCB-1016	2.0	U	ng/L	P426832	
		Beta-BHC	0.10	U	ng/L	P426832	
		PCB-1221	2.0	U	ng/L	P426832	
		Beta-Cyfluthrin	1.3	U	ng/L	P426832	
		PCB-1232	2.0	U	ng/L	P426832	
		Bifenthrin	0.51	U	ng/L	P426832	
		PCB-1242	2.0	U	ng/L	P426832	
		PCB-1248	2.0	U	ng/L	P426832	
		Chlorothalonil	3.7	U	ng/L	P426832	
		PCB-1254	2.0	U	ng/L	P426832	
		Cis-Nonachlor	0.20	U	ng/L	P426832	
		PCB-1260	2.0	U	ng/L	P426832	MS
		Cypermethrin	1.5	U	ng/L	P426832	
		Dacthal	0.15	U	ng/L	P426832	
		DDD-p,p'	0.25	U	ng/L	P426832	
		DDE-p,p'	0.20	U	ng/L	P426832	
		DDT-p,p'	0.25	UJ	ng/L	P426832	LCS
		Delta-BHC	0.41	U	ng/L	P426832	
		Deltamethrin	1.3	U	ng/L	P426832	
		Dichlobenil	0.25	U	ng/L	P426832	
		Dicofol	1.3	U	ng/L	P426832	
		Dieldrin	0.41	U	ng/L	P426832	
		Endosulfan I	0.41	U	ng/L	P426832	
		Endosulfan II	0.41	U	ng/L	P426832	
		Endosulfan Sulfate	0.30	U	ng/L	P426832	
		Endrin	0.41	U	ng/L	P426832	
		Endrin Aldehyde	0.76	U	ng/L	P426832	
		Endrin Ketone	0.41	U	ng/L	P426832	
		Esfenvalerate	0.76	U	ng/L	P426832	
		Ethalfuralin	0.15	U	ng/L	P426832	
		Fenpropathrin	0.25	U	ng/L	P426832	
		Gamma-BHC	0.13	U	ng/L	P426832	
		Gamma-Chlordane	0.20	U	ng/L	P426832	
		Heptachlor	0.20	U	ng/L	P426832	
		Heptachlor Epoxide	0.25	U	ng/L	P426832	
		Hexachlorobenzene**	1.0	U	ng/L	P426832	
		Kepone	5.1	UJ	ng/L	P426832	CCV
		Lambda-Cyhalothrin	0.76	U	ng/L	P426832	
		Methoprene	0.76	U	ng/L	P426832	
		Methoxychlor	0.30	U	ng/L	P426832	
		MGK-264	0.20	U	ng/L	P426832	

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391308	EPA 8270E	Mirex	0.35	U	ng/L	P426832	
		Oxychlordane	0.30	U	ng/L	P426832	
		Permethrin	1.6	U	ng/L	P426832	
		Phenothrin	0.91	U	ng/L	P426832	
		Piperonyl Butoxide	0.15	U	ng/L	P426832	
		Prallethrin	2.0	U	ng/L	P426832	
		Tau-Fluvalinate	0.25	U	ng/L	P426832	
		Tetramethrin	0.76	U	ng/L	P426832	
		Trans-Nonachlor	0.20	U	ng/L	P426832	
		Triclosan Methyl	0.15	U	ng/L	P426832	
		Trifluralin	0.20	U	ng/L	P426832	
	EPA 8276	Chlordane	2.0	U	ng/L	P426832	MS, RPD
		Toxaphene	15	U	ng/L	P426832	MS
2391311	EPA 8321B	2,4-D	0.051		ug/L	P426799	
		Acesulfame K	0.10	U	ug/L	P426535	
		2,4,5-T	0.0040	U	ug/L	P426799	
		AMPA	1.4		ug/L	P426535	
		Acetaminophen	0.015	I	ug/L	P426799	
		Acetamiprid	0.0020	U	ug/L	P426799	
		Endothall	0.25	U	ug/L	P426535	
		Glufosinate	0.10	U	ug/L	P426535	
		Glyphosate	2.9		ug/L	P426535	
		Afidopyrophen	0.0020	U	ug/L	P426799	
		Bentazon	0.12		ug/L	P426799	
		Sucralose	0.066		ug/L	P426535	
		Benzovindiflupyr	0.0020	U	ug/L	P426799	
		Carbamazepine	8.0E-04	U	ug/L	P426799	
		Clothianidin	0.0020	U	ug/L	P426799	
		Dinotefuran	0.0020	U	ug/L	P426799	
		Diuron	0.0020	U	ug/L	P426799	
		Fenuron	0.032	U	ug/L	P426799	
		Fluridone	1.0E-03	I	ug/L	P426799	
		Imazapyr	0.15		ug/L	P426799	
		Hydrocodone	0.0020	U	ug/L	P426799	
		Ibuprofen	0.080	U	ug/L	P426799	
		Imidacloprid	0.0020	U	ug/L	P426799	
		Linuron	0.0040	U	ug/L	P426799	
		Mandestrobin	0.0020	U	ug/L	P426799	
		MCP	0.011		ug/L	P426799	
		Naproxen	0.0080	U	ug/L	P426799	
		Primidone	0.0040	U	ug/L	P426799	
		Pyraclostrobin	0.0020	U	ug/L	P426799	
		Silvex	0.0040	U	ug/L	P426799	
		Thiamethoxam	0.0020	U	ug/L	P426799	
		Tolfenpyrad	0.0020	U	ug/L	P426799	

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391311	EPA 8321B	Triclopyr	0.0040	U	ug/L	P426799	

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

Sample Location: North Canal @US1

Collection Date/Time: 03/01/2023 10:10

Field ID: G5SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391312	EPA 8321B	2,4-D	0.018		ug/L	P426799	
		Acesulfame K	0.10	U	ug/L	P426535	
		2,4,5-T	0.0040	U	ug/L	P426799	
		AMPA	0.10	U	ug/L	P426535	
		Acetaminophen	0.0080	U	ug/L	P426799	
		Acetamiprid	0.0020	U	ug/L	P426799	
		Endothall	0.25	U	ug/L	P426535	
		Glufosinate	0.10	U	ug/L	P426535	
		Glyphosate	0.10	U	ug/L	P426535	
		Afidopyropen	0.0020	U	ug/L	P426799	
		Bentazon	0.23		ug/L	P426799	
		Sucralose	0.060		ug/L	P426535	
		Benzovindiflupyr	0.0020	U	ug/L	P426799	
		Carbamazepine	0.0077		ug/L	P426799	
		Clothianidin	0.0029	I	ug/L	P426799	
		Dinotefuran	0.012		ug/L	P426799	
		Diuron	0.0065	I	ug/L	P426799	
		Fenuron	0.032	U	ug/L	P426799	
		Fluridone	0.0064		ug/L	P426799	
		Imazapyr	0.15		ug/L	P426799	
		Hydrocodone	0.0020	U	ug/L	P426799	
		Ibuprofen	0.080	U	ug/L	P426799	
		Imidacloprid	0.0052	I	ug/L	P426799	
		Linuron	0.0040	U	ug/L	P426799	
		Mandestrobin	0.0020	U	ug/L	P426799	
		MCP	0.0033	I	ug/L	P426799	
		Naproxen	0.0080	U	ug/L	P426799	
		Primidone	0.052		ug/L	P426799	
		Pyraclostrobin	0.0020	U	ug/L	P426799	
		Silvex	0.0040	U	ug/L	P426799	
		Thiamethoxam	0.017		ug/L	P426799	
		Tolfenpyrad	0.0020	U	ug/L	P426799	
		Triclopyr	0.0040	U	ug/L	P426799	

Sample Location: South Canal @ US 1

Collection Date/Time: 03/01/2023 11:45

Field ID: G5SE0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391313	EPA 200.7 Rev. 4.4	Calcium	114		mg/L	P426646	
		Iron	520		ug/L	P426646	
		Magnesium	48.0		mg/L	P426646	
		Potassium	10.6		mg/L	P426646	
		Sodium	230		mg/L	P426646	
		Strontium	7.29E+03		ug/L	P426646	
		Tin	3.0	U	ug/L	P426646	
		Titanium	2.5	I	ug/L	P426646	
		Vanadium	2.2	I	ug/L	P426646	
		Zinc	5.0	U	ug/L	P426646	
	EPA 200.8 Rev. 5.4	Aluminum	152		ug/L	P426646	
		Antimony	0.066	I	ug/L	P426646	
		Arsenic	0.69		ug/L	P426646	
		Barium	50.4		ug/L	P426646	
		Beryllium	0.016	I	ug/L	P426646	
		Boron	122		ug/L	P426646	
		Cadmium	0.020	U	ug/L	P426646	
		Chromium	0.66	I	ug/L	P426646	
		Cobalt	0.118		ug/L	P426646	
		Copper	1.26		ug/L	P426646	
	SM 2340 B-2011	Lead	0.20	U	ug/L	P426646	
		Manganese	12.6		ug/L	P426646	
		Molybdenum	0.81		ug/L	P426646	
		Nickel	0.50	U	ug/L	P426646	
		Selenium	0.26	I	ug/L	P426646	
		Silver	0.010	U	ug/L	P426646	
		Thallium	0.10	U	ug/L	P426646	
		Hardness	483		mg/L	P426646	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P426646

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: P426646

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: P426832

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
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P426832

Component	Result	Code	Units
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'	0.25	U	ng/L
DDT-p,p'	0.25	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	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	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	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P426832

Component	Result	Code	Units
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: P426832

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P426535

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P426799

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	109		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	105		P	85 - 115
Sodium	106		P	85 - 115
Strontium	102		P	85 - 115
Tin	104		P	85 - 115
Titanium	106		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	102		P	85 - 115
Barium	103		P	85 - 115
Beryllium	99.6		P	85 - 115
Boron	101		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	100		P	85 - 115
Copper	100		P	85 - 115
Lead	99.2		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	102		P	85 - 115
Selenium	105		P	85 - 115
Silver	100		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 8270E
Batch ID: P426832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	29.8		P	10 - 92.0
Alpha-BHC	68.9		F	75 - 107
Alpha-Chlordane	58.5		P	50 - 108
Beta-BHC	75.2		P	36 - 138
Beta-Cyfluthrin	38.2		P	20 - 161
Bifenthrin	29.1		P	10 - 119
Chlorothalonil	69.5		P	26 - 186
Cis-Nonachlor	46.9		P	42 - 119
Cypermethrin	39.4		P	22 - 150
Dacthal	80.5		P	72 - 119
DDD-p,p'	54.2		P	45 - 107
DDE-p,p'	48.5		P	48 - 106
DDT-p,p'	44.8		F	48 - 110
Delta-BHC	78.1		P	54 - 140
Deltamethrin	45.4		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P426832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	44.1		P	36 - 117
Dicofol	56.3		P	46 - 155
Dieldrin	59.4		P	54 - 110
Endosulfan I	59.4		P	59 - 105
Endosulfan II	71.7		P	51 - 118
Endosulfan Sulfate	75.3		P	57 - 121
Endrin	61.7		P	10 - 120
Endrin Aldehyde	63.0		P	34 - 118
Endrin Ketone	72.2		P	69 - 177
Esfenvalerate	38.3		P	23 - 168
Ethalfuralin	50.2		P	49 - 99.0
Fenpropathrin	40.4		P	34 - 117
Gamma-BHC	111		P	72 - 117
Gamma-Chlordane	47.3		P	43 - 106
Heptachlor	58.5		P	41 - 98.0
Heptachlor Epoxide	71.6		P	57 - 106
Hexachlorobenzene	37.3		P	36 - 99.0
Kepone	38.7		P	16 - 215
Lambda-Cyhalothrin	32.6		P	21 - 177
Methoprene	36.4		P	10 - 119
Methoxychlor	61.5		P	60 - 112
MGK-264	66.7		P	26 - 122
Mirex	31.2		P	10 - 169
Oxychlordane	47.0		P	43 - 105
PCB-1016	67.0		P	48 - 112
PCB-1260	66.7		P	44 - 118
Permethrin	38.5		P	24 - 148
Phenothrin	31.1		P	10 - 106
Piperonyl Butoxide	70.4		P	10 - 139
Prallethrin	53.7		P	17 - 109
Tau-Fluvalinate	31.2		P	13 - 131
Tetramethrin	61.3		P	10 - 132
Trans-Nonachlor	45.6		P	44 - 106
Triclosan Methyl	59.4		P	59 - 109
Trifluralin	46.4		P	44 - 101

Reference Method: EPA 8276
Batch ID: P426832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	61.1		P	61 - 116
Toxaphene	73.4		P	48 - 124

Reference Method: EPA 8321B
Batch ID: P426535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	97.8		P	40 - 150
AMPA	106		P	40 - 150
Endothall	96.7		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	95.9		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P426535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	98.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426799

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.1		P	40 - 150
2,4,5-T	91.9		P	40 - 150
Acetaminophen	103		P	30 - 150
Acetamiprid	68.8		P	40 - 150
Afidopyropen	69.4		P	30 - 150
Bentazon	110		P	30 - 150
Benzovindiflupyr	84.7		P	40 - 150
Carbamazepine	82.2		P	40 - 150
Clothianidin	104		P	40 - 150
Dinotefuran	80.1		P	40 - 150
Diuron	78.8		P	40 - 150
Fenuron	99.3		P	40 - 150
Fluridone	84.7		P	40 - 150
Hydrocodone	96.3		P	40 - 150
Ibuprofen	84.1		P	40 - 150
Imazapyr	91.8		P	40 - 150
Imidacloprid	93.3		P	40 - 150
Linuron	75.2		P	40 - 150
Mandestrobin	90.7		P	40 - 150
MCPP	90.5		P	40 - 150
Naproxen	94.5		P	40 - 150
Primidone	94.5		P	40 - 150
Pyraclostrobin	78.8		P	40 - 150
Silvex	92.5		P	40 - 150
Thiamethoxam	92.0		P	40 - 150
Tolfenpyrad	61.4		P	30 - 150
Triclopyr	91.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P426646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390788	Calcium	109		P	80 - 120
2390788	Iron	105	112	P/P	80 - 120
2390788	Magnesium	110		P	80 - 120
2390788	Potassium	98.2	104	P/P	80 - 120
2390788	Sodium	99.9	110	P/P	80 - 120
2390788	Strontium	98.7	105	P/P	80 - 120
2390788	Tin	101	105	P/P	80 - 120
2390788	Titanium	105	110	P/P	80 - 120
2390788	Vanadium	101	106	P/P	80 - 120
2390788	Zinc	97.3	102	P/P	80 - 120
2391077	Calcium	112		P	80 - 120
2391077	Iron	113		P	80 - 120
2391077	Magnesium	118		P	80 - 120
2391077	Potassium	108		P	80 - 120
2391077	Sodium	107		P	80 - 120
2391077	Strontium	107		P	80 - 120
2391077	Tin	106		P	80 - 120
2391077	Titanium	106		P	80 - 120
2391077	Vanadium	105		P	80 - 120
2391077	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390788	Aluminum	101	100	P/P	80 - 120
2390788	Antimony	104	105	P/P	80 - 120
2390788	Arsenic	105	105	P/P	80 - 120
2390788	Barium	104	105	P/P	80 - 120
2390788	Beryllium	99.2	99.2	P/P	80 - 120
2390788	Boron	102	102	P/P	80 - 120
2390788	Cadmium	105	105	P/P	80 - 120
2390788	Chromium	102	102	P/P	80 - 120
2390788	Cobalt	100	99.3	P/P	80 - 120
2390788	Copper	98.7	99.2	P/P	80 - 120
2390788	Lead	99.7	100	P/P	80 - 120
2390788	Manganese	104	103	P/P	80 - 120
2390788	Molybdenum	102	103	P/P	80 - 120
2390788	Nickel	101	101	P/P	80 - 120
2390788	Selenium	105	105	P/P	80 - 120
2390788	Silver	101	102	P/P	80 - 120
2390788	Thallium	102	105	P/P	80 - 120
2391077	Aluminum	99.7		P	80 - 120
2391077	Antimony	102		P	80 - 120
2391077	Arsenic	103		P	80 - 120
2391077	Barium	104		P	80 - 120
2391077	Beryllium	96.8		P	80 - 120
2391077	Boron	101		P	80 - 120
2391077	Cadmium	105		P	80 - 120
2391077	Chromium	102		P	80 - 120
2391077	Cobalt	99.9		P	80 - 120
2391077	Copper	101		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391077	Lead	101		P	80 - 120
2391077	Manganese	104		P	80 - 120
2391077	Molybdenum	99.6		P	80 - 120
2391077	Nickel	101		P	80 - 120
2391077	Selenium	106		P	80 - 120
2391077	Silver	99.9		P	80 - 120
2391077	Thallium	103		P	80 - 120

Reference Method: EPA 8270E

Batch ID: P426832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390549	PCB-1016	59.3	47.8	P/P	46 - 111
2390549	PCB-1260	57.0	44.8	P/F	45 - 114
2390746	Aldrin	47.0	49.9	P/P	20 - 82.0
2390746	Alpha-BHC	82.5	79.6	P/P	71 - 109
2390746	Alpha-Chlordane	70.2	71.3	P/P	42 - 106
2390746	Beta-BHC	87.3	86.7	P/P	69 - 180
2390746	Beta-Cyfluthrin	57.4	63.9	P/P	18 - 175
2390746	Bifenthrin	47.9	56.0	P/P	21 - 128
2390746	Chlorothalonil	54.1	58.7	P/P	10 - 300
2390746	Cis-Nonachlor	63.2	64.9	P/P	34 - 106
2390746	Cypermethrin	57.2	63.2	P/P	22 - 158
2390746	Dacthal	85.2	86.3	P/P	54 - 116
2390746	DDD-p,p'	67.8	72.4	P/P	34 - 107
2390746	DDE-p,p'	66.9	70.3	P/P	33 - 110
2390746	DDT-p,p'	64.5	65.0	P/P	50 - 122
2390746	Delta-BHC	83.8	79.9	P/P	77 - 193
2390746	Deltamethrin	64.1	70.8	P/P	10 - 195
2390746	Dichlobenil	58.3	60.8	P/P	25 - 113
2390746	Dicofol	68.8	67.6	P/P	38 - 247
2390746	Dieldrin	74.1	76.6	P/P	45 - 118
2390746	Endosulfan I	68.3	69.3	P/P	51 - 106
2390746	Endosulfan II	73.8	81.5	P/P	37 - 122
2390746	Endosulfan Sulfate	78.3	76.2	P/P	43 - 132
2390746	Endrin	75.6	78.8	P/P	29 - 101
2390746	Endrin Aldehyde	70.9	73.2	P/P	19 - 110
2390746	Endrin Ketone	83.9	108	P/P	60 - 140
2390746	Esfenvalerate	57.7	63.8	P/P	26 - 199
2390746	Ethalfuralin	68.8	68.3	P/P	45 - 99.0
2390746	Fenpropathrin	60.8	63.1	P/P	35 - 120
2390746	Gamma-BHC	87.9	84.0	P/P	63 - 128
2390746	Gamma-Chlordane	64.5	68.0	P/P	40 - 104
2390746	Heptachlor	57.1	59.3	P/P	36 - 97.0
2390746	Heptachlor Epoxide	75.0	75.2	P/P	49 - 184
2390746	Hexachlorobenzene	50.8	55.7	P/P	39 - 96.0
2390746	Kepone	58.4	57.0	P/P	10 - 217
2390746	Lambda-Cyhalothrin	51.4	58.6	P/P	21 - 193
2390746	Methoprene	54.9	62.1	P/P	20 - 106
2390746	Methoxychlor	74.6	73.4	P/P	53 - 118
2390746	MGK-264	77.0	74.7	P/P	40 - 118
2390746	Mirex	48.7	56.4	P/P	26 - 92.0

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P426832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390746	Oxychlordane	64.4	69.1	P/P	44 - 99.0
2390746	Permethrin	57.5	64.7	P/P	33 - 182
2390746	Phenothrin	48.3	59.9	P/P	10 - 129
2390746	Piperonyl Butoxide	78.2	77.0	P/P	10 - 211
2390746	Prallethrin	64.2	64.4	P/P	24 - 113
2390746	Tau-Fluvalinate	51.3	57.8	P/P	14 - 149
2390746	Tetramethrin	69.2	69.5	P/P	17 - 151
2390746	Trans-Nonachlor	64.6	67.2	P/P	42 - 102
2390746	Triclosan Methyl	73.7	75.1	P/P	48 - 108
2390746	Trifluralin	70.0	70.0	P/P	47 - 96.0

Reference Method: EPA 8276
Batch ID: P426832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390549	Chlordane	46.2	34.0	F/F	53 - 126
2390549	Toxaphene	54.6	41.2	F/F	56 - 211

Reference Method: EPA 8321B
Batch ID: P426535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390312	Acesulfame K	123	126	P/P	40 - 150
2390312	AMPA	88.2	89.8	P/P	40 - 150
2390312	Endothall	106	106	P/P	40 - 150
2390312	Glufosinate	102	100	P/P	40 - 150
2390312	Glyphosate	96.2	111	P/P	40 - 150
2390312	Sucralose	96.8	98.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391449	2,4-D	92.7	98.6	P/P	40 - 150
2391449	2,4,5-T	102	106	P/P	40 - 150
2391449	Acetaminophen	124	114	P/P	30 - 150
2391449	Acetamiprid	69.8	71.4	P/P	40 - 150
2391449	Afidopyropen	65.0	71.6	P/P	30 - 150
2391449	Bentazon	124	122	P/P	30 - 150
2391449	Benzovindiflupyr	84.7	89.1	P/P	40 - 150
2391449	Carbamazepine	65.5	74.0	P/P	40 - 150
2391449	Clothianidin	118	118	P/P	40 - 150
2391449	Dinotefuran	99.7	109	P/P	40 - 150
2391449	Diuron	68.7	72.7	P/P	40 - 150
2391449	Fenuron	80.5	83.5	P/P	40 - 150
2391449	Fluridone	79.6	83.0	P/P	40 - 150
2391449	Hydrocodone	97.0	94.9	P/P	40 - 150
2391449	Ibuprofen	72.8	89.2	P/P	40 - 150
2391449	Imazapyr	89.0	83.0	P/P	40 - 150
2391449	Imidacloprid	145	144	P/P	40 - 150
2391449	Linuron	69.7	82.7	P/P	40 - 150
2391449	Mandestrobin	88.1	87.8	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P426799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391449	MCP	96.8	97.3	P/P	40 - 150
2391449	Naproxen	106	90.0	P/P	40 - 150
2391449	Primidone	98.7	98.7	P/P	40 - 150
2391449	Pyraclostrobin	76.8	79.2	P/P	40 - 150
2391449	Silvex	122	112	P/P	40 - 150
2391449	Thiamethoxam	101	101	P/P	40 - 150
2391449	Tolfenpyrad	54.3	59.1	P/P	30 - 150
2391449	Triclopyr	111	119	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P426646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390788	Calcium	5.70	Spike	P	0 - 20
2390788	Iron	5.97	Spike	P	0 - 20
2390788	Magnesium	5.95	Spike	P	0 - 20
2390788	Potassium	5.53	Spike	P	0 - 20
2390788	Sodium	5.29	Spike	P	0 - 20
2390788	Strontium	6.01	Spike	P	0 - 20
2390788	Tin	4.55	Spike	P	0 - 20
2390788	Titanium	4.07	Spike	P	0 - 20
2390788	Vanadium	4.69	Spike	P	0 - 20
2390788	Zinc	3.80	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390788	Aluminum	0.178	Spike	P	0 - 20
2390788	Antimony	1.54	Spike	P	0 - 20
2390788	Arsenic	0.490	Spike	P	0 - 20
2390788	Barium	1.16	Spike	P	0 - 20
2390788	Beryllium	0.0194	Spike	P	0 - 20
2390788	Boron	0.0690	Spike	P	0 - 20
2390788	Cadmium	0.0892	Spike	P	0 - 20
2390788	Chromium	0.0778	Spike	P	0 - 20
2390788	Cobalt	0.991	Spike	P	0 - 20
2390788	Copper	0.496	Spike	P	0 - 20
2390788	Lead	0.738	Spike	P	0 - 20
2390788	Manganese	0.603	Spike	P	0 - 20
2390788	Molybdenum	0.700	Spike	P	0 - 20
2390788	Nickel	0.0782	Spike	P	0 - 20
2390788	Selenium	0.299	Spike	P	0 - 20
2390788	Silver	0.928	Spike	P	0 - 20
2390788	Thallium	2.25	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P426832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390549	PCB-1016	22.2	Spike	P	0 - 32
2390549	PCB-1260	24.5	Spike	P	0 - 31
2390746	Aldrin	6.11	Spike	P	0 - 41
2390746	Alpha-BHC	3.60	Spike	P	0 - 25
2390746	Alpha-Chlordane	1.58	Spike	P	0 - 33
2390746	Beta-BHC	0.677	Spike	P	0 - 36
2390746	Beta-Cyfluthrin	10.8	Spike	P	0 - 42
2390746	Bifenthrin	15.5	Spike	P	0 - 53
2390746	Chlorothalonil	8.10	Spike	P	0 - 71
2390746	Cis-Nonachlor	2.66	Spike	P	0 - 29
2390746	Cypermethrin	10.0	Spike	P	0 - 40
2390746	Dacthal	1.27	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P426832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390746	DDD-p,p'	6.57	Spike	P	0 - 39
2390746	DDE-p,p'	4.90	Spike	P	0 - 33
2390746	DDT-p,p'	0.794	Spike	P	0 - 40
2390746	Delta-BHC	4.72	Spike	P	0 - 37
2390746	Deltamethrin	9.96	Spike	P	0 - 100
2390746	Dichlobenil	4.34	Spike	P	0 - 40
2390746	Dicofol	1.74	Spike	P	0 - 31
2390746	Dieldrin	2.61	Spike	P	0 - 27
2390746	Endosulfan I	1.42	Spike	P	0 - 23
2390746	Endosulfan II	10.0	Spike	P	0 - 28
2390746	Endosulfan Sulfate	2.82	Spike	P	0 - 38
2390746	Endrin	4.20	Spike	P	0 - 63
2390746	Endrin Aldehyde	3.18	Spike	P	0 - 60
2390746	Endrin Ketone	25.2	Spike	P	0 - 37
2390746	Esfenvalerate	10.1	Spike	P	0 - 52
2390746	Ethalfuralin	0.732	Spike	P	0 - 23
2390746	Fenpropathrin	3.60	Spike	P	0 - 32
2390746	Gamma-BHC	4.56	Spike	P	0 - 17
2390746	Gamma-Chlordane	5.37	Spike	P	0 - 40
2390746	Heptachlor	3.89	Spike	P	0 - 29
2390746	Heptachlor Epoxide	0.358	Spike	P	0 - 25
2390746	Hexachlorobenzene	9.14	Spike	P	0 - 36
2390746	Kepone	2.51	Spike	P	0 - 93
2390746	Lambda-Cyhalothrin	13.1	Spike	P	0 - 55
2390746	Methoprene	12.4	Spike	P	0 - 53
2390746	Methoxychlor	1.65	Spike	P	0 - 29
2390746	MGK-264	3.06	Spike	P	0 - 35
2390746	Mirex	14.6	Spike	P	0 - 46
2390746	Oxychlordane	7.02	Spike	P	0 - 29
2390746	Permethrin	11.8	Spike	P	0 - 44
2390746	Phenothrin	21.4	Spike	P	0 - 56
2390746	Piperonyl Butoxide	1.51	Spike	P	0 - 100
2390746	Prallethrin	0.390	Spike	P	0 - 42
2390746	Tau-Fluvalinate	11.9	Spike	P	0 - 54
2390746	Tetramethrin	0.314	Spike	P	0 - 51
2390746	Trans-Nonachlor	3.95	Spike	P	0 - 37
2390746	Triclosan Methyl	1.87	Spike	P	0 - 31
2390746	Trifluralin	0.0592	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P426832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390549	Chlordane	30.9	Spike	F	0 - 25
2390549	Toxaphene	23.4	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P426535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390312	Acesulfame K	2.32	Spike	P	0 - 30
2390312	AMPA	1.89	Spike	P	0 - 30
2390312	Endothall	0.705	Spike	P	0 - 30
2390312	Glufosinate	1.67	Spike	P	0 - 30
2390312	Glyphosate	14.3	Spike	P	0 - 30
2390312	Sucralose	1.75	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P426799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391449	2,4-D	3.34	Spike	P	0 - 30
2391449	2,4,5-T	4.70	Spike	P	0 - 30
2391449	Acetaminophen	8.43	Spike	P	0 - 30
2391449	Acetamiprid	2.29	Spike	P	0 - 30
2391449	Afidopyropen	9.74	Spike	P	0 - 30
2391449	Bentazon	0.903	Spike	P	0 - 30
2391449	Benzovindiflupyr	5.12	Spike	P	0 - 30
2391449	Carbamazepine	11.1	Spike	P	0 - 30
2391449	Clothianidin	0.294	Spike	P	0 - 30
2391449	Dinotefuran	8.76	Spike	P	0 - 30
2391449	Diuron	5.34	Spike	P	0 - 30
2391449	Fenuron	3.69	Spike	P	0 - 30
2391449	Fluridone	4.23	Spike	P	0 - 30
2391449	Hydrocodone	2.17	Spike	P	0 - 30
2391449	Ibuprofen	20.3	Spike	P	0 - 30
2391449	Imazapyr	5.39	Spike	P	0 - 30
2391449	Imidacloprid	1.07	Spike	P	0 - 30
2391449	Linuron	17.0	Spike	P	0 - 30
2391449	Mandestrobin	0.337	Spike	P	0 - 30
2391449	MCPP	0.464	Spike	P	0 - 30
2391449	Naproxen	16.1	Spike	P	0 - 30
2391449	Primidone	0.000304	Spike	P	0 - 30
2391449	Pyraclostrobin	3.09	Spike	P	0 - 30
2391449	Silvex	8.50	Spike	P	0 - 30
2391449	Thiamethoxam	0.136	Spike	P	0 - 30
2391449	Tolfenpyrad	8.48	Spike	P	0 - 30
2391449	Triclopyr	7.01	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2391308
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	73.1	P	29 - 130
EPA 8270E	Decachlorobiphenyl	62.7	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	48.6	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	47.1	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	44.9	P	30 - 101
EPA 8276	PCNB	60.0	P	48 - 121

Lab Sample ID: 2391311
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.1	P	30 - 160
EPA 8321B	Diuron-d6	53.1	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.0	P	30 - 160
EPA 8321B	Primidone-d5	98.4	P	30 - 160
EPA 8321B	Sucralose-d6	89.9	P	30 - 160

Lab Sample ID: 2391312
Field Sample ID: G5SE0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.8	P	30 - 160
EPA 8321B	Diuron-d6	52.3	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.2	P	30 - 160
EPA 8321B	Primidone-d5	94.6	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A117818

Included Lab Sample IDs: 2391311, 2391312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	103	P/P	60 - 160
Sucralose	103	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A117822

Included Lab Sample IDs: 2391311, 2391312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	109	P/P	60 - 160
Endothall	103	105	P/P	60 - 160
Glufosinate	94.0	108	P/P	60 - 160
Glyphosate	91.4	101	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117841

Included Lab Sample IDs: 2391313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	104	P/P	90 - 110
Antimony	102	104	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Barium	102	104	P/P	90 - 110
Beryllium	103	104	P/P	90 - 110
Boron	97.6	101	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Cobalt	99.4	100	P/P	90 - 110
Copper	99.2	100	P/P	90 - 110
Lead	97.8	99.6	P/P	90 - 110
Manganese	104	103	P/P	90 - 110
Molybdenum	99.4	99.8	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Selenium	107	108	P/P	90 - 110
Silver	100	100	P/P	90 - 110
Thallium	99.8	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117899

Included Lab Sample IDs: 2391311, 2391312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.6	95.2	P/P	50 - 150
2,4,5-T	87.4	91.5	P/P	50 - 150
Acetaminophen	106	106	P/P	60 - 160
Acetamiprid	101	103	P/P	50 - 150
Afidopyropen	103	73.8	P/P	50 - 150
Bentazon	134	143	P/P	50 - 160
Benzovindiflupyr	106	101	P/P	50 - 150
Carbamazepine	95.1	102	P/P	60 - 150
Clothianidin	98.1	110	P/P	60 - 150
Dinotefuran	93.1	100	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A117899

Included Lab Sample IDs: 2391311, 2391312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	103	108	P/P	60 - 160
Fenuron	98.8	95.5	P/P	60 - 150
Fluridone	112	103	P/P	60 - 160
Hydrocodone	98.6	94.4	P/P	60 - 150
Ibuprofen	78.7	116	P/P	50 - 160
Imazapyr	96.2	97.4	P/P	50 - 150
Imidacloprid	101	98.4	P/P	60 - 150
Linuron	119	96.7	P/P	60 - 150
Mandestrobin	107	106	P/P	50 - 150
MCPP	107	101	P/P	50 - 150
Naproxen	114	106	P/P	50 - 160
Primidone	86.5	89.1	P/P	60 - 150
Pyraclostrobin	98.0	105	P/P	60 - 150
Silvex	99.2	96.5	P/P	50 - 150
Thiamethoxam	96.1	96.2	P/P	50 - 150
Tolfenpyrad	99.3	94.5	P/P	60 - 150
Triclopyr	91.4	91.4	P/P	50 - 150

Reference Method: EPA 8270E

Run ID: A117926

Included Lab Sample IDs: 2391308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	103		P	80 - 120
PCB-1260	111		P	80 - 120

Reference Method: EPA 8276

Run ID: A117934

Included Lab Sample IDs: 2391308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	92.7		P	80 - 120
Toxaphene	94.9		P	80 - 120

Reference Method: EPA 8270E

Run ID: A117940

Included Lab Sample IDs: 2391308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	96.8		P	80 - 120
Alpha-BHC	99.7		P	80 - 120
Alpha-Chlordane	101		P	80 - 120
Beta-BHC	106		P	80 - 120
Beta-Cyfluthrin	101		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	118		P	80 - 120
Cis-Nonachlor	97.5		P	80 - 120
Cypermethrin	96.0		P	80 - 120
Dacthal	98.5		P	80 - 120
DDD-p,p'	103		P	80 - 120
DDE-p,p'	97.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A117940
Included Lab Sample IDs: 2391308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDT-p,p'	98.7		P	80 - 120
Delta-BHC	108		P	80 - 120
Deltamethrin	101		P	80 - 120
Dichlobenil	102		P	80 - 120
Dicofol	102		P	80 - 120
Dieldrin	99.6		P	80 - 120
Endosulfan I	95.7		P	80 - 120
Endosulfan II	109		P	80 - 120
Endosulfan Sulfate	101		P	80 - 120
Endrin	95.8		P	80 - 120
Endrin Aldehyde	90.9		P	80 - 120
Endrin Ketone	96.5		P	80 - 120
Esfenvalerate	102		P	80 - 120
Ethalfuralin	98.3		P	80 - 120
Fenpropathrin	101		P	80 - 120
Gamma-BHC	99.5		P	80 - 120
Gamma-Chlordane	97.1		P	80 - 120
Heptachlor	98.4		P	80 - 120
Heptachlor Epoxide	94.8		P	80 - 120
Hexachlorobenzene	94.5		P	80 - 120
Kepone	64.1*		F	80 - 120
Lambda-Cyhalothrin	100		P	80 - 120
Methoprene	97.6		P	80 - 120
Methoxychlor	102		P	80 - 120
MGK-264	102		P	80 - 120
Mirex	96.2		P	80 - 120
Oxychlordane	97.8		P	80 - 120
Permethrin	101		P	80 - 120
Phenothrin	99.4		P	80 - 120
Piperonyl Butoxide	103		P	80 - 120
Prallethrin	95.9		P	80 - 120
Tau-Fluvalinate	104		P	80 - 120
Tetramethrin	103		P	80 - 120
Trans-Nonachlor	95.9		P	80 - 120
Triclosan Methyl	96.6		P	80 - 120
Trifluralin	101		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A118045
Included Lab Sample IDs: 2391313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	105	P/P	90 - 110
Iron	102	106	P/P	90 - 110
Magnesium	103	106	P/P	90 - 110
Potassium	101	104	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Strontium	98.6	98.4	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Vanadium	99.5	100	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A118045

Included Lab Sample IDs: 2391313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	96.6	95.8	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	MS
			LCS	SMP			
EPA 200.7 Rev. 4.4	Calcium	110	109	112			5.70
	Iron	109	105	112	113		5.97
	Magnesium	110	110	118			5.95
	Potassium	105	98.2	104	108		5.53
	Sodium	106	99.9	110	107		5.29
	Strontium	102	98.7	105	107		6.01
	Tin	104	101	105	106		4.55
	Titanium	106	105	110	106		4.07
	Vanadium	102	101	106	105		4.69
	Zinc	102	97.3	102	101		3.80
EPA 200.8 Rev. 5.4	Aluminum	99.9	101	100	99.7		0.178
	Antimony	102	104	105	102		1.54
	Arsenic	102	105	105	103		0.490
	Barium	103	104	105	104		1.16
	Beryllium	99.6	99.2	99.2	96.8		0.0194
	Boron	101	102	102	101		0.0690
	Cadmium	104	105	105	105		0.0892
	Chromium	100	102	102	102		0.0778
	Cobalt	100	100	99.3	99.9		0.991
	Copper	100	98.7	99.2	101		0.496
	Lead	99.2	99.7	100	101		0.738
	Manganese	102	104	103	104		0.603
	Molybdenum	101	102	103	99.6		0.700
	Nickel	102	101	101	101		0.0782
	Selenium	105	105	105	106		0.299
	Silver	100	101	102	99.9		0.928
	Thallium	102	102	105	103		2.25
	Aldrin	29.8	47.0	49.9			6.11
	Alpha-BHC	68.9	82.5	79.6			3.60
EPA 8270E	Alpha-Chlordane	58.5	70.2	71.3			1.58
	Beta-BHC	75.2	87.3	86.7			0.677
	Beta-Cyfluthrin	38.2	57.4	63.9			10.8
	Bifenthrin	29.1	47.9	56.0			15.5
	Chlorothalonil	69.5	54.1	58.7			8.10
	Cis-Nonachlor	46.9	63.2	64.9			2.66
	Cypermethrin	39.4	57.2	63.2			10.0
	Dacthal	80.5	85.2	86.3			1.27
	DDD-p,p'	54.2	67.8	72.4			6.57
	DDE-p,p'	48.5	66.9	70.3			4.90
	DDT-p,p'	44.8	64.5	65.0			0.794
	Delta-BHC	78.1	83.8	79.9			4.72
	Deltamethrin	45.4	64.1	70.8			9.96
	Dichlobenil	44.1	58.3	60.8			4.34
	Dicofol	56.3	68.8	67.6			1.74
	Dieldrin	59.4	74.1	76.6			2.61
	Endosulfan I	59.4	68.3	69.3			1.42
	Endosulfan II	71.7	73.8	81.5			10.0
	Endosulfan Sulfate	75.3	78.3	76.2			2.82
	Endrin	61.7	75.6	78.8			4.20
	Endrin Aldehyde	63.0	73.2	70.9			3.18
	Endrin Ketone	72.2	108	83.9			25.2
	Esfenvalerate	38.3	63.8	57.7			10.1
	Ethalfuralin	50.2	68.3	68.8			0.732
	Fenpropathrin	40.4	63.1	60.8			3.60

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Gamma-BHC	111	84.0	87.9		4.56
	Gamma-Chlordane	47.3	68.0	64.5		5.37
	Heptachlor	58.5	59.3	57.1		3.89
	Heptachlor Epoxide	71.6	75.2	75.0		0.358
	Hexachlorobenzene	37.3	55.7	50.8		9.14
	Kepone	38.7	57.0	58.4		2.51
	Lambda-Cyhalothrin	32.6	58.6	51.4		13.1
	Methoprene	36.4	62.1	54.9		12.4
	Methoxychlor	61.5	73.4	74.6		1.65
	MGK-264	66.7	74.7	77.0		3.06
	Mirex	31.2	56.4	48.7		14.6
	Oxychlordane	47.0	69.1	64.4		7.02
	PCB-1016	67.0	59.3	47.8		22.2
	PCB-1260	66.7	57.0	44.8		24.5
	Permethrin	38.5	64.7	57.5		11.8
	Phenothrin	31.1	59.9	48.3		21.4
	Piperonyl Butoxide	70.4	77.0	78.2		1.51
	Prallethrin	53.7	64.4	64.2		0.390
	Tau-Fluvalinate	31.2	57.8	51.3		11.9
	Tetramethrin	61.3	69.5	69.2		0.314
	Trans-Nonachlor	45.6	67.2	64.6		3.95
	Triclosan Methyl	59.4	75.1	73.7		1.87
	Trifluralin	46.4	70.0	70.0		0.0592
EPA 8276	Chlordane	61.1	46.2	34.0		30.9
	Toxaphene	73.4	54.6	41.2		23.4
EPA 8321B	2,4-D	92.1	92.7	98.6		3.34
	2,4,5-T	91.9	102	106		4.70
	Acesulfame K	97.8	123	126		2.32
	Acetaminophen	103	114	124		8.43
	Acetamiprid	68.8	71.4	69.8		2.29
	Afidopyropen	69.4	65.0	71.6		9.74
	AMPA	106	88.2	89.8		1.89
	Bentazon	110	124	122		0.903
	Benzovindiflupyr	84.7	84.7	89.1		5.12
	Carbamazepine	82.2	74.0	65.5		11.1
	Clothianidin	104	118	118		0.294
	Dinotefuran	80.1	109	99.7		8.76
	Diuron	78.8	68.7	72.7		5.34
	Endothall	96.7	106	106		0.705
	Fenuron	99.3	83.5	80.5		3.69
	Fluridone	84.7	79.6	83.0		4.23
	Glufosinate	105	102	100		1.67
	Glyphosate	95.9	96.2	111		14.3
	Hydrocodone	96.3	94.9	97.0		2.17
	Ibuprofen	84.1	72.8	89.2		20.3
	Imazapyr	91.8	89.0	83.0		5.39
	Imidacloprid	93.3	144	145		1.07
	Linuron	75.2	69.7	82.7		17.0
	Mandestrobin	90.7	88.1	87.8		0.337
	MCPP	90.5	96.8	97.3		0.464
	Naproxen	94.5	106	90.0		16.1
	Primidone	94.5	98.7	98.7		0.0003
	Pyraclostrobin	78.8	76.8	79.2		3.09
	Silvex	92.5	122	112		8.50

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Sucralose	98.4	96.8	98.6			1.75
	Thiamethoxam	92.0	101	101			0.136
	Tolfenpyrad	61.4	54.3	59.1			8.48
	Triclopyr	91.2	111	119			7.01

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2391313
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2391313
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2391308
EPA 8270E	PCBs in water matrices by GC/MS/MS	2391308
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2391308
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2391311, 2391312
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2391313

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	03/02/2023	03/03/2023 13:20	George D Taylor	03/16/2023 16:51	Chase Roberts	2391313
	03/02/2023	03/03/2023 13:20	George D Taylor	03/16/2023 16:58	Chase Roberts	2391313
EPA 200.8 Rev. 5.4	03/02/2023	03/03/2023 13:20	George D Taylor	03/06/2023 19:14	Emily M Philpot	2391313
EPA 8270E	03/02/2023	03/03/2023 09:00	Julie Wi	03/09/2023 00:52	Julie Wi	2391308
	03/02/2023	03/03/2023 09:00	Julie Wi	03/10/2023 02:01	Julie Wi	2391308
EPA 8276	03/02/2023	03/03/2023 09:00	Julie Wi	03/08/2023 11:19	Lipi Saha	2391308
EPA 8321B	03/02/2023	03/03/2023 08:00	Manjita Shrestha	03/03/2023 14:54	Manjita Shrestha	2391311
	03/02/2023	03/03/2023 08:00	Manjita Shrestha	03/03/2023 15:07	Manjita Shrestha	2391312
	03/02/2023	03/03/2023 08:00	Manjita Shrestha	03/04/2023 01:39	Manjita Shrestha	2391311
	03/02/2023	03/03/2023 08:00	Manjita Shrestha	03/04/2023 01:53	Manjita Shrestha	2391312
	03/02/2023	03/07/2023 09:00	Hoor Shaik	03/08/2023 17:30	Juyoung Kim	2391311
	03/02/2023	03/07/2023 09:00	Hoor Shaik	03/08/2023 17:48	Juyoung Kim	2391312
	03/02/2023	03/07/2023 09:00	Hoor Shaik	03/09/2023 11:23	Juyoung Kim	2391311
SM 2340 B-2011	03/02/2023	03/07/2023 09:00	Hoor Shaik	03/09/2023 11:41	Juyoung Kim	2391312
	03/02/2023			03/16/2023 16:51	Chase Roberts	2391313