Chemical Analysis Report

SE-DIST-2023-07-06-01

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

Event Description: **Vero Beach**
Request ID: **RQ-2023-07-03-40**
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: 31-JUL-2023 11:38

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: NORTH CANAL ATUS 1 **Collection Date/Time: 07/05/2023 10:00**

Field ID: G5SE0043 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421664	EPA 8321B	2,4-D	0.033		ug/L	P432236	
		Acesulfame K	0.10	U	ug/L	P432281	
		2,4,5-T	0.0040	U	ug/L	P432236	
		AMPA	1.7		ug/L	P432281	
		Acetaminophen	0.0080	U	ug/L	P432236	
		Acetamiprid	0.0020	U	ug/L	P432236	
		Endothall	0.25	U	ug/L	P432281	
		Glufosinate	0.10	U	ug/L	P432281	
		Glyphosate	2.6		ug/L	P432281	
		Afidopyropen	0.0020	U	ug/L	P432236	
		Bentazon	0.14		ug/L	P432236	
		Sucralose	2.0		ug/L	P432281	
		Benzovindiflupyr	0.0020	U	ug/L	P432236	
		Carbamazepine	0.0020	I	ug/L	P432236	
		Clothianidin	0.0039	I	ug/L	P432236	
		Dinotefuran	0.0052	I	ug/L	P432236	
		Diuron	0.0039	I J	ug/L	P432236	MS
		Fenuron	0.032	U	ug/L	P432236	
		Fluridone	0.022		ug/L	P432236	
		Imazapyr	0.28		ug/L	P432236	
		Hydrocodone	0.0020	U	ug/L	P432236	
		Ibuprofen	0.080	U	ug/L	P432236	
		Imidacloprid	0.0086		ug/L	P432236	
		Linuron	0.0040	U	ug/L	P432236	
		Mandestrobin	0.0020	U	ug/L	P432236	
		MCPP	0.0038	I	ug/L	P432236	
		Naproxen	0.0080	U	ug/L	P432236	
		Primidone	0.0097	I	ug/L	P432236	
		Pyraclostrobin	0.0020	U	ug/L	P432236	
		Silvex	0.0040	U	ug/L	P432236	
		Thiamethoxam	0.011		ug/L	P432236	
		Tolfenpyrad	0.0020	U	ug/L	P432236	
		Triclopyr	0.0040	U	ug/L	P432236	

Ref. Method and Comment:
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: SOUTH CANAL AT US 1 **Collection Date/Time: 07/05/2023 11:20**

Field ID: G5SE0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421665	EPA 200.7 Rev. 4.4	Calcium	104		mg/L	P432361	
		Iron	700		ug/L	P432361	
		Magnesium	39.9		mg/L	P432361	
		Potassium	9.7		mg/L	P432361	
		Sodium	189		mg/L	P432361	
		Strontium	6.29E+03		ug/L	P432361	
		Tin	3.8	I	ug/L	P432361	
		Titanium	1.5	I	ug/L	P432361	
		Vanadium	2.6	I	ug/L	P432361	
		Zinc	5.0	U	ug/L	P432361	
	EPA 200.8 Rev. 5.4	Aluminum	190		ug/L	P432700	
		Antimony	0.086	I	ug/L	P432361	
		Arsenic	1.07		ug/L	P432361	
		Barium	46.5		ug/L	P432361	
		Beryllium	0.025	I	ug/L	P432361	
		Boron	117		ug/L	P432361	
		Cadmium	0.020	U	ug/L	P432361	
		Chromium	0.69	I	ug/L	P432361	
		Cobalt	0.137		ug/L	P432361	
		Copper	1.55		ug/L	P432361	
		Lead	0.27	I	ug/L	P432361	
		Manganese	18.0		ug/L	P432361	
		Molybdenum	0.93		ug/L	P432361	
		Nickel	0.50	U	ug/L	P432361	
		Selenium	0.28	I	ug/L	P432361	
		Silver	0.010	U	ug/L	P432512	
		Thallium	0.10	U	ug/L	P432361	
	SM 2340 B-2011	Hardness	424		mg/L	P432361	

Sample Location: VERO NORTH CANAL AT 66TH AVE **Collection Date/Time: 07/05/2023 09:30**

Field ID: G5SE0069 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421662	EPA 8270E	Aldrin	0.68	U	ng/L	P432065	
		Alpha-BHC	0.10	U	ng/L	P432065	
		Alpha-Chlordane	0.21	U	ng/L	P432065	
		PCB-1016	2.1	U	ng/L	P432065	
		Beta-BHC	0.10	U	ng/L	P432065	RPD
		PCB-1221	2.1	U	ng/L	P432065	
		Beta-Cyfluthrin	1.3	U	ng/L	P432065	
		PCB-1232	2.1	U	ng/L	P432065	
		Bifenthrin	0.52	U	ng/L	P432065	
		PCB-1242	2.1	U	ng/L	P432065	
		PCB-1248	2.1	U	ng/L	P432065	
		Chlorothalonil	3.8	U	ng/L	P432065	
		PCB-1254	2.1	U	ng/L	P432065	
		Cis-Nonachlor	0.21	U	ng/L	P432065	
		PCB-1260	2.1	U	ng/L	P432065	
		Cypermethrin	1.6	U	ng/L	P432065	
		Dacthal	0.16	UJ	ng/L	P432065	CCV, RPD
		DDD-p,p'	0.26	U	ng/L	P432065	
		DDE-p,p'	0.21	U	ng/L	P432065	
		DDT-p,p'	0.84	U	ng/L	P432065	
		Delta-BHC	0.42	U	ng/L	P432065	
		Deltamethrin	1.3	U	ng/L	P432065	
		Dichlobenil	0.26	U	ng/L	P432065	
		Dicofol	1.3	U	ng/L	P432065	
		Dieldrin	0.42	U	ng/L	P432065	
		Endosulfan I	0.42	U	ng/L	P432065	MS, RPD
		Endosulfan II	0.94	U	ng/L	P432065	
		Endosulfan Sulfate	0.31	U	ng/L	P432065	
		Endrin	0.94	U	ng/L	P432065	
		Endrin Aldehyde	0.78	U	ng/L	P432065	
		Endrin Ketone	0.42	U	ng/L	P432065	
		Esfenvalerate	0.78	U	ng/L	P432065	
		Ethalfluralin	0.16	U	ng/L	P432065	
		Fenpropathrin	0.26	U	ng/L	P432065	
		Gamma-BHC	0.13	U	ng/L	P432065	MS, RPD
		Gamma-Chlordane	0.21	U	ng/L	P432065	
		Heptachlor	0.21	U	ng/L	P432065	
		Heptachlor Epoxide	0.26	U	ng/L	P432065	
		Hexachlorobenzene**	1.0	U	ng/L	P432065	
		Kepone	14	U	ng/L	P432065	
		Lambda-Cyhalothrin	0.78	U	ng/L	P432065	
		Methoprene	0.78	U	ng/L	P432065	
		Methoxychlor	0.31	U	ng/L	P432065	
		MGK-264	0.21	U	ng/L	P432065	RPD

Field ID: G5SE0069 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421662	EPA 8270E	Mirex	0.37	U	ng/L	P432065	
		Oxychlordane	0.31	U	ng/L	P432065	
		Permethrin	1.7	U	ng/L	P432065	
		Phenothrin	0.94	U	ng/L	P432065	
		Piperonyl Butoxide	0.72	I	ng/L	P432065	
		Prallethrin	2.1	U	ng/L	P432065	
		Tau-Fluvalinate	0.26	U	ng/L	P432065	
		Tetramethrin	0.78	U	ng/L	P432065	
		Trans-Nonachlor	0.21	U	ng/L	P432065	
		Triclosan Methyl	0.16	U	ng/L	P432065	
		Trifluralin	0.21	U	ng/L	P432065	
	EPA 8276	Chlordane	2.1	UQ	ng/L	P432706	MS
		Toxaphene	16	UQ	ng/L	P432706	
2421663	EPA 8321B	2,4-D	0.040		ug/L	P432236	
		Acesulfame K	0.10	U	ug/L	P432281	
		2,4,5-T	0.0040	U	ug/L	P432236	
		AMPA	2.2		ug/L	P432281	
		Acetaminophen	0.0080	U	ug/L	P432236	
		Acetamiprid	0.0020	U	ug/L	P432236	
		Endothall	0.25	U	ug/L	P432281	
		Glufosinate	0.10	U	ug/L	P432281	
		Glyphosate	9.1		ug/L	P432281	
		Afidopyropen	0.0020	U	ug/L	P432236	
		Bentazon	0.046		ug/L	P432236	
		Sucralose	0.054		ug/L	P432281	
		Benzovindiflupyr	0.0020	U	ug/L	P432236	
		Carbamazepine	8.0E-04	U	ug/L	P432236	
		Clothianidin	0.0020	U	ug/L	P432236	
		Dinotefuran	0.0020	U	ug/L	P432236	
		Diuron	0.0020	U	ug/L	P432236	MS
		Fenuron	0.032	U	ug/L	P432236	
		Fluridone	0.0012	I	ug/L	P432236	
		Imazapyr	0.21		ug/L	P432236	
		Hydrocodone	0.0020	U	ug/L	P432236	
		Ibuprofen	0.080	U	ug/L	P432236	
		Imidacloprid	0.0044	I	ug/L	P432236	
		Linuron	0.0040	U	ug/L	P432236	
		Mandestrobin	0.0020	U	ug/L	P432236	
		MCPP	0.0035	I	ug/L	P432236	
		Naproxen	0.0080	U	ug/L	P432236	
		Primidone	0.0040	U	ug/L	P432236	
		Pyraclostrobin	0.0020	U	ug/L	P432236	
		Silvex	0.0040	U	ug/L	P432236	
		Thiamethoxam	0.0020	U	ug/L	P432236	
		Tolfenpyrad	0.0020	U	ug/L	P432236	

Field ID: G5SE0069 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2421663	EPA 8321B	Triclopyr	0.0040	U	ug/L	P432236	

Ref. Method and Comment:
EPA 8270E: MS accuracy for dieldrin not assessed due to high content of this parameter in the sample spiked. Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8276: Sample expired for preparation due to need for re-extraction.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

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: P432361

Component	Result	Code	Units
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Thallium	0.10	U	ug/L

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

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Reference Method: EPA 8270E
Batch ID: P432065

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P432065

Component	Result	Code	Units
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
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
Ethalfluralin	0.15	U	ng/L
Ethalfluralin	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P432065

Component	Result	Code	Units
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
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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P432065

Component	Result	Code	Units
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276
Batch ID: P432706

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

Reference Method: EPA 8321B
Batch ID: P432236

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P432281

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P432281

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.0		P	85 - 115
Iron	101		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	100		P	85 - 115
Strontium	97.7		P	85 - 115
Tin	98.7		P	85 - 115
Titanium	97.3		P	85 - 115
Vanadium	96.6		P	85 - 115
Zinc	97.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Barium	103		P	85 - 115
Beryllium	100		P	85 - 115
Boron	102		P	85 - 115
Cadmium	99.3		P	85 - 115
Chromium	95.0		P	85 - 115
Cobalt	98.4		P	85 - 115
Copper	98.2		P	85 - 115
Lead	92.6		P	85 - 115
Manganese	97.1		P	85 - 115
Molybdenum	99.1		P	85 - 115
Nickel	98.6		P	85 - 115
Selenium	102		P	85 - 115
Thallium	100		P	85 - 115

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

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.4		P	80 - 120

Reference Method: EPA 8270E
Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	49.6		P	30 - 96.0
Alpha-BHC	82.7		P	70 - 109
Alpha-Chlordane	46.7		P	45 - 107
Beta-BHC	80.1		P	64 - 138
Beta-Cyfluthrin	57.2		P	17 - 141

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bifenthrin	61.2		P	10 - 113
Chlorothalonil	97.5		P	26 - 180
Cis-Nonachlor	95.0		P	37 - 102
Cypermethrin	51.1		P	20 - 133
Dacthal	94.8		P	69 - 114
DDD-p,p'	47.5		P	42 - 105
DDE-p,p'	49.6		P	42 - 106
DDT-p,p'	72.0		P	42 - 107
Delta-BHC	67.3		P	67 - 144
Deltamethrin	55.7		P	15 - 149
Dichlobenil	67.6		P	46 - 117
Dicofol	78.2		P	34 - 114
Dieldrin	88.5		P	50 - 108
Endosulfan I	64.5		P	55 - 104
Endosulfan II	53.1		P	51 - 111
Endosulfan Sulfate	67.9		P	56 - 121
Endrin	81.5		P	10 - 106
Endrin Aldehyde	71.9		P	34 - 114
Endrin Ketone	73.0		P	63 - 177
Esfenvalerate	53.4		P	29 - 143
Ethalfluralin	54.3		P	46 - 96.0
Fenpropathrin	82.4		P	28 - 115
Gamma-BHC	85.0		P	65 - 121
Gamma-Chlordane	48.6		P	39 - 103
Heptachlor	81.2		P	39 - 94.0
Heptachlor Epoxide	56.2		P	54 - 104
Hexachlorobenzene	71.9		P	36 - 100
Kepone	73.3		P	10 - 225
Lambda-Cyhalothrin	41.0		P	10 - 135
Methoprene	36.0		P	10 - 109
Methoxychlor	75.2		P	52 - 112
MGK-264	79.9		P	44 - 117
Mirex	58.0		P	20 - 90.0
Oxychlordane	44.3		P	44 - 102
PCB-1016	76.7		P	45 - 107
PCB-1260	71.1		P	40 - 118
Permethrin	52.4		P	18 - 135
Phenothrin	56.6		P	10 - 102
Piperonyl Butoxide	84.8		P	28 - 156
Prallethrin	65.1		P	28 - 113
Tau-Fluvalinate	51.6		P	10 - 123
Tetramethrin	75.6		P	18 - 158
Trans-Nonachlor	78.6		P	39 - 104
Triclosan Methyl	64.9		P	54 - 108
Trifluralin	70.3		P	46 - 97.0

Reference Method: EPA 8276
Batch ID: P432706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	78.7		P	52 - 117
Toxaphene	88.8		P	44 - 125

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P432236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.7		P	40 - 150
2,4,5-T	87.2		P	40 - 150
Acetaminophen	65.5		P	30 - 150
Acetamiprid	73.2		P	40 - 150
Afidopyropen	54.3		P	30 - 150
Bentazon	121		P	30 - 150
Benzovindiflupyr	75.6		P	40 - 150
Carbamazepine	72.2		P	40 - 150
Clothianidin	87.9		P	40 - 150
Dinotefuran	95.0		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	85.3		P	40 - 150
Fluridone	82.7		P	40 - 150
Hydrocodone	89.1		P	40 - 150
Ibuprofen	67.0		P	40 - 150
Imazapyr	76.8		P	40 - 150
Imidacloprid	83.5		P	40 - 150
Linuron	72.1		P	40 - 150
Mandestrobin	88.2		P	40 - 150
MCPP	96.6		P	40 - 150
Naproxen	68.0		P	40 - 150
Primidone	75.6		P	40 - 150
Pyraclostrobin	68.0		P	40 - 150
Silvex	97.7		P	40 - 150
Thiamethoxam	67.7		P	40 - 150
Tolfenpyrad	42.2		P	30 - 150
Triclopyr	89.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P432281

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422210	Calcium	100		P	80 - 120
2422210	Iron	101	99.7	P/P	80 - 120
2422210	Magnesium	102	101	P/P	80 - 120
2422210	Potassium	99.8	99.9	P/P	80 - 120
2422210	Sodium	100		P	80 - 120
2422210	Strontium	99.1	98.9	P/P	80 - 120
2422210	Tin	101	99.1	P/P	80 - 120
2422210	Titanium	98.0	97.5	P/P	80 - 120
2422210	Vanadium	98.8	98.7	P/P	80 - 120
2422210	Zinc	101	99.9	P/P	80 - 120
2422211	Calcium	101		P	80 - 120
2422211	Iron	98.9		P	80 - 120
2422211	Magnesium	102		P	80 - 120
2422211	Potassium	98.5		P	80 - 120
2422211	Sodium	101		P	80 - 120
2422211	Strontium	97.6		P	80 - 120
2422211	Tin	97.5		P	80 - 120
2422211	Titanium	90.5		P	80 - 120
2422211	Vanadium	97.4		P	80 - 120
2422211	Zinc	99.1		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422210	Antimony	101	111	P/P	80 - 120
2422210	Arsenic	100	110	P/P	80 - 120
2422210	Barium	103	113	P/P	80 - 120
2422210	Beryllium	97.2	105	P/P	80 - 120
2422210	Boron	103	114	P/P	80 - 120
2422210	Cadmium	100	109	P/P	80 - 120
2422210	Chromium	97.3	107	P/P	80 - 120
2422210	Cobalt	97.1	107	P/P	80 - 120
2422210	Copper	99.5	110	P/P	80 - 120
2422210	Lead	93.4	102	P/P	80 - 120
2422210	Manganese	96.1	106	P/P	80 - 120
2422210	Molybdenum	99.2	108	P/P	80 - 120
2422210	Nickel	99.2	109	P/P	80 - 120
2422210	Selenium	102	109	P/P	80 - 120
2422210	Thallium	104	113	P/P	80 - 120
2422211	Antimony	98.8		P	80 - 120
2422211	Arsenic	97.4		P	80 - 120
2422211	Barium	102		P	80 - 120
2422211	Beryllium	94.8		P	80 - 120
2422211	Boron	104		P	80 - 120
2422211	Cadmium	98.7		P	80 - 120
2422211	Chromium	94.7		P	80 - 120
2422211	Cobalt	94.9		P	80 - 120
2422211	Copper	95.8		P	80 - 120
2422211	Lead	91.8		P	80 - 120
2422211	Manganese	93.1		P	80 - 120
2422211	Molybdenum	95.7		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422211	Nickel	97.9		P	80 - 120
2422211	Selenium	96.0		P	80 - 120
2422211	Thallium	101		P	80 - 120

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

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424324	Aluminum	95.9	96.0	P/P	80 - 120
2424542	Aluminum	99.3		P	80 - 120

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422038	Aldrin	48.3	52.8	P/P	24 - 81.0
2422038	Alpha-BHC	73.5	88.4	P/P	65 - 110
2422038	Alpha-Chlordane	77.0	76.1	P/P	43 - 119
2422038	Beta-BHC	61.3	110	P/P	54 - 165
2422038	Beta-Cyfluthrin	40.2	43.7	P/P	27 - 165
2422038	Bifenthrin	45.9	51.5	P/P	17 - 117
2422038	Chlorothalonil	70.7	68.0	P/P	10 - 255
2422038	Cis-Nonachlor	56.4	63.2	P/P	34 - 98.0
2422038	Cypermethrin	46.1	50.6	P/P	25 - 143
2422038	Dacthal	77.2	114	P/P	55 - 139
2422038	DDD-p,p'	54.8	51.1	P/P	30 - 109
2422038	DDE-p,p'	54.0	44.2	P/P	35 - 106
2422038	DDT-p,p'	60.1	66.1	P/P	41 - 101
2422038	Delta-BHC	78.3	97.1	P/P	58 - 165
2422038	Deltamethrin	47.3	53.4	P/P	10 - 194
2422038	Dichlobenil	50.1	63.7	P/P	22 - 114
2422038	Dicofol	67.5	93.4	P/P	17 - 133
2422038	Endosulfan I	71.1	125	P/F	49 - 104
2422038	Endosulfan II	60.2	54.4	P/P	37 - 117
2422038	Endosulfan Sulfate	61.0	68.4	P/P	38 - 128
2422038	Endrin	56.7	57.8	P/P	35 - 116
2422038	Endrin Aldehyde	63.1	52.9	P/P	19 - 108
2422038	Endrin Ketone	76.2	60.2	P/P	44 - 134
2422038	Esfenvalerate	58.3	56.8	P/P	27 - 176
2422038	Ethalfluralin	65.7	55.5	P/P	49 - 100
2422038	Fenpropathrin	56.9	62.7	P/P	34 - 117
2422038	Gamma-BHC	96.0	143	P/F	59 - 129
2422038	Gamma-Chlordane	60.9	68.3	P/P	33 - 107
2422038	Heptachlor	67.1	71.2	P/P	37 - 94.0
2422038	Heptachlor Epoxide	75.0	61.9	P/P	38 - 118

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422038	Hexachlorobenzene	72.8	91.8	P/P	35 - 97.0
2422038	Kepone	40.8	68.7	P/P	10 - 221
2422038	Lambda-Cyhalothrin	46.1	49.1	P/P	23 - 190
2422038	Methoprene	41.5	34.1	P/P	21 - 109
2422038	Methoxychlor	57.8	77.9	P/P	46 - 118
2422038	MGK-264	55.9	107	P/P	39 - 122
2422038	Mirex	39.0	40.0	P/P	25 - 90.0
2422038	Oxychlordane	64.9	68.5	P/P	42 - 100
2422038	Permethrin	46.0	41.2	P/P	33 - 181
2422038	Phenothrin	67.6	79.0	P/P	12 - 125
2422038	Piperonyl Butoxide	62.7	74.3	P/P	10 - 178
2422038	Prallethrin	67.3	68.6	P/P	24 - 122
2422038	Tau-Fluvalinate	53.5	54.6	P/P	13 - 151
2422038	Tetramethrin	71.9	77.1	P/P	16 - 172
2422038	Trans-Nonachlor	66.3	75.3	P/P	39 - 100
2422038	Triclosan Methyl	71.9	93.0	P/P	43 - 110
2422038	Trifluralin	63.4	67.4	P/P	45 - 94.0
2422046	PCB-1016	82.8	73.9	P/P	45 - 107
2422046	PCB-1260	82.4	66.7	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P432706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424521	Chlordane	34.7	36.3	F/F	43 - 123
2424521	Toxaphene	43.3	38.7	P/P	27 - 156

Reference Method: EPA 8321B
Batch ID: P432236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421664	2,4-D	81.0	89.8	P/P	40 - 150
2421664	2,4,5-T	101	94.0	P/P	40 - 150
2421664	Acetaminophen	66.6	64.0	P/P	30 - 150
2421664	Acetamiprid	62.4	61.8	P/P	40 - 150
2421664	Afidopyropen	62.5	65.2	P/P	30 - 150
2421664	Benzovindiflupyr	77.1	79.8	P/P	40 - 150
2421664	Carbamazepine	50.2	49.1	P/P	40 - 150
2421664	Clothianidin	77.5	75.2	P/P	40 - 150
2421664	Dinotefuran	79.0	73.2	P/P	40 - 150
2421664	Diuron	31.8	34.4	F/F	40 - 150
2421664	Fenuron	65.9	63.8	P/P	40 - 150
2421664	Hydrocodone	65.5	62.3	P/P	40 - 150
2421664	Ibuprofen	66.1	56.4	P/P	40 - 150
2421664	Imidacloprid	110	106	P/P	40 - 150
2421664	Linuron	57.5	54.7	P/P	40 - 150
2421664	Mandestrobin	83.7	81.6	P/P	40 - 150
2421664	MCPP	99.3	103	P/P	40 - 150
2421664	Naproxen	96.0	98.4	P/P	40 - 150
2421664	Primidone	76.2	73.4	P/P	40 - 150
2421664	Pyraclostrobin	80.3	79.6	P/P	40 - 150
2421664	Silvex	88.9	83.2	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P432236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421664	Thiamethoxam	56.7	55.3	P/P	40 - 150
2421664	Tolfenpyrad	48.5	47.3	P/P	30 - 150
2421664	Triclopyr	102	91.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P432281

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

Quality Assurance Report
Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422210	Calcium	0.621	Spike	P	0 - 20
2422210	Iron	0.639	Spike	P	0 - 20
2422210	Magnesium	0.568	Spike	P	0 - 20
2422210	Potassium	0.0469	Spike	P	0 - 20
2422210	Sodium	0.00131	Spike	P	0 - 20
2422210	Strontium	0.224	Spike	P	0 - 20
2422210	Tin	1.97	Spike	P	0 - 20
2422210	Titanium	0.545	Spike	P	0 - 20
2422210	Vanadium	0.140	Spike	P	0 - 20
2422210	Zinc	0.867	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422210	Antimony	8.95	Spike	P	0 - 20
2422210	Arsenic	9.09	Spike	P	0 - 20
2422210	Barium	6.79	Spike	P	0 - 20
2422210	Beryllium	7.12	Spike	P	0 - 20
2422210	Boron	8.13	Spike	P	0 - 20
2422210	Cadmium	8.34	Spike	P	0 - 20
2422210	Chromium	9.60	Spike	P	0 - 20
2422210	Cobalt	9.47	Spike	P	0 - 20
2422210	Copper	10.4	Spike	P	0 - 20
2422210	Lead	8.87	Spike	P	0 - 20
2422210	Manganese	4.11	Spike	P	0 - 20
2422210	Molybdenum	8.84	Spike	P	0 - 20
2422210	Nickel	9.48	Spike	P	0 - 20
2422210	Selenium	6.13	Spike	P	0 - 20
2422210	Thallium	8.21	Spike	P	0 - 20

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

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424324	Aluminum	0.139	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422038	Aldrin	8.98	Spike	P	0 - 41
2422038	Alpha-BHC	18.5	Spike	P	0 - 25
2422038	Alpha-Chlordane	1.21	Spike	P	0 - 32
2422038	Beta-BHC	56.9	Spike	F	0 - 33
2422038	Beta-Cyfluthrin	8.42	Spike	P	0 - 43
2422038	Bifenthrin	11.6	Spike	P	0 - 52
2422038	Chlorothalonil	3.89	Spike	P	0 - 82
2422038	Cis-Nonachlor	11.2	Spike	P	0 - 33
2422038	Cypermethrin	9.29	Spike	P	0 - 51
2422038	Dacthal	38.2	Spike	F	0 - 27
2422038	DDD-p,p'	6.99	Spike	P	0 - 39
2422038	DDE-p,p'	19.9	Spike	P	0 - 31
2422038	DDT-p,p'	9.50	Spike	P	0 - 29
2422038	Delta-BHC	21.4	Spike	P	0 - 35
2422038	Deltamethrin	12.2	Spike	P	0 - 100
2422038	Dichlobenil	24.0	Spike	P	0 - 40
2422038	Dicofol	32.1	Spike	P	0 - 37
2422038	Dieldrin	0.898	Spike	P	0 - 27
2422038	Endosulfan I	54.7	Spike	F	0 - 23
2422038	Endosulfan II	10.1	Spike	P	0 - 34
2422038	Endosulfan Sulfate	11.5	Spike	P	0 - 36
2422038	Endrin	1.97	Spike	P	0 - 45
2422038	Endrin Aldehyde	17.5	Spike	P	0 - 76
2422038	Endrin Ketone	23.4	Spike	P	0 - 43
2422038	Esfenvalerate	2.69	Spike	P	0 - 51
2422038	Ethalfluralin	16.9	Spike	P	0 - 22
2422038	Fenpropathrin	9.65	Spike	P	0 - 49
2422038	Gamma-BHC	39.2	Spike	F	0 - 28
2422038	Gamma-Chlordane	10.3	Spike	P	0 - 40
2422038	Heptachlor	5.93	Spike	P	0 - 29
2422038	Heptachlor Epoxide	8.62	Spike	P	0 - 33
2422038	Hexachlorobenzene	23.1	Spike	P	0 - 36
2422038	Kepone	51.0	Spike	P	0 - 85
2422038	Lambda-Cyhalothrin	6.39	Spike	P	0 - 55
2422038	Methoprene	19.5	Spike	P	0 - 53
2422038	Methoxychlor	29.6	Spike	P	0 - 50
2422038	MGK-264	63.0	Spike	F	0 - 43
2422038	Mirex	2.45	Spike	P	0 - 40
2422038	Oxychlordane	5.50	Spike	P	0 - 31
2422038	Permethrin	11.1	Spike	P	0 - 50
2422038	Phenothrin	15.5	Spike	P	0 - 58
2422038	Piperonyl Butoxide	17.1	Spike	P	0 - 100
2422038	Prallethrin	1.80	Spike	P	0 - 39
2422038	Tau-Fluvalinate	2.06	Spike	P	0 - 54
2422038	Tetramethrin	6.97	Spike	P	0 - 51
2422038	Trans-Nonachlor	12.8	Spike	P	0 - 39
2422038	Triclosan Methyl	25.6	Spike	P	0 - 31
2422038	Trifluralin	6.05	Spike	P	0 - 22
2422046	PCB-1016	11.4	Spike	P	0 - 25
2422046	PCB-1260	21.0	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8276
Batch ID: P432706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424521	Chlordane	4.69	Spike	P	0 - 28
2424521	Toxaphene	8.93	Spike	P	0 - 27

Reference Method: EPA 8321B
Batch ID: P432236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421664	2,4-D	6.91	Spike	P	0 - 30
2421664	2,4,5-T	7.63	Spike	P	0 - 30
2421664	Acetaminophen	3.97	Spike	P	0 - 30
2421664	Acetamiprid	0.884	Spike	P	0 - 30
2421664	Afidopyropen	4.14	Spike	P	0 - 30
2421664	Bentazon	10.5	Spike	P	0 - 30
2421664	Benzovindiflupyr	3.42	Spike	P	0 - 30
2421664	Carbamazepine	1.74	Spike	P	0 - 30
2421664	Clothianidin	2.80	Spike	P	0 - 30
2421664	Dinotefuran	6.98	Spike	P	0 - 30
2421664	Diuron	6.69	Spike	P	0 - 30
2421664	Fenuron	3.32	Spike	P	0 - 30
2421664	Fluridone	3.71	Spike	P	0 - 30
2421664	Hydrocodone	5.12	Spike	P	0 - 30
2421664	Ibuprofen	15.8	Spike	P	0 - 30
2421664	Imazapyr	4.16	Spike	P	0 - 30
2421664	Imidacloprid	3.58	Spike	P	0 - 30
2421664	Linuron	4.93	Spike	P	0 - 30
2421664	Mandestrobin	2.53	Spike	P	0 - 30
2421664	MCPP	3.44	Spike	P	0 - 30
2421664	Naproxen	2.47	Spike	P	0 - 30
2421664	Primidone	3.28	Spike	P	0 - 30
2421664	Pyraclostrobin	0.854	Spike	P	0 - 30
2421664	Silvex	6.71	Spike	P	0 - 30
2421664	Thiamethoxam	2.02	Spike	P	0 - 30
2421664	Tolfenpyrad	2.54	Spike	P	0 - 30
2421664	Triclopyr	10.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P432281

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

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2421662
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	96.0	P	37 - 129
EPA 8270E	Decachlorobiphenyl	50.9	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	50.4	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	59.9	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	59.4	P	28 - 102
EPA 8276	Decachlorobiphenyl	16.4	F	28 - 102
EPA 8276	PCNB	92.6	P	49 - 115
EPA 8276	PCNB	87.9	P	49 - 115

Lab Sample ID: 2421663
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	58.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.1	P	30 - 160
EPA 8321B	Diuron-d6	35.3	P	30 - 160
EPA 8321B	Endothall-d6	84.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	120	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.0	P	30 - 160
EPA 8321B	Primidone-d5	84.9	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Lab Sample ID: 2421664
Field Sample ID: G5SE0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.9	P	30 - 160
EPA 8321B	Diuron-d6	46.5	P	30 - 160
EPA 8321B	Endothall-d6	85.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.4	P	30 - 160
EPA 8321B	Primidone-d5	78.5	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A120301
Included Lab Sample IDs: 2421663, 2421664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	102	P/P	60 - 160
AMPA	102	100	P/P	60 - 160
Endothall	72.5	74.6	P/P	60 - 160
Endothall	74.6	78.7	P/P	60 - 160
Glufosinate	116	118	P/P	60 - 160
Glufosinate	118	112	P/P	60 - 160
Glyphosate	127	131	P/P	60 - 160
Glyphosate	129	127	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A120302
Included Lab Sample IDs: 2421663, 2421664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	126	P/P	60 - 160
Acesulfame K	126	138	P/P	60 - 160
Sucralose	103	90.7	P/P	60 - 160
Sucralose	90.7	101	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A120358
Included Lab Sample IDs: 2421665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	96.2	P/P	95 - 105
Iron	101	96.8	P/P	95 - 105
Magnesium	101	96.0	P/P	95 - 105
Potassium	99.8	96.2	P/P	95 - 105
Sodium	98.7	96.2	P/P	95 - 105
Strontium	98.8	100	P/P	95 - 105
Tin	97.9	97.8	P/P	95 - 105
Titanium	97.3	97.9	P/P	95 - 105
Vanadium	97.0	97.3	P/P	95 - 105
Zinc	98.9	99.6	P/P	95 - 105

Reference Method: EPA 8270E
Run ID: A120361
Included Lab Sample IDs: 2421662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	91.5		P	80 - 120
Alpha-BHC	104		P	80 - 120
Alpha-Chlordane	104		P	80 - 120
Beta-BHC	82.3		P	80 - 120
Beta-Cyfluthrin	98.3		P	80 - 120
Bifenthrin	99.4		P	80 - 120
Chlorothalonil	101		P	80 - 120
Cis-Nonachlor	113		P	80 - 120
Cypermethrin	115		P	80 - 120
Dacthal	124*		F	80 - 120
DDD-p,p'	95.4		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A120361
Included Lab Sample IDs: 2421662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDE-p,p'	109		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	102		P	80 - 120
Deltamethrin	105		P	80 - 120
Dichlobenil	89.2		P	80 - 120
Dicofol	95.2		P	80 - 120
Dieldrin	104		P	80 - 120
Endosulfan I	97.5		P	80 - 120
Endosulfan II	89.9		P	80 - 120
Endosulfan Sulfate	95.9		P	80 - 120
Endrin	115		P	80 - 120
Endrin Aldehyde	95.5		P	80 - 120
Endrin Ketone	83.1		P	80 - 120
Esfenvalerate	89.6		P	80 - 120
Ethalfluralin	85.7		P	80 - 120
Fenpropathrin	88.3		P	80 - 120
Gamma-BHC	92.3		P	80 - 120
Gamma-Chlordane	99.5		P	80 - 120
Heptachlor	107		P	80 - 120
Heptachlor Epoxide	112		P	80 - 120
Hexachlorobenzene	112		P	80 - 120
Kepone	110		P	80 - 120
Lambda-Cyhalothrin	89.5		P	80 - 120
Methoprene	83.8		P	80 - 120
Methoxychlor	98.5		P	80 - 120
MGK-264	95.7		P	80 - 120
Mirex	90.2		P	80 - 120
Oxychlordane	96.6		P	80 - 120
Permethrin	112		P	80 - 120
Phenothrin	111		P	80 - 120
Piperonyl Butoxide	99.8		P	80 - 120
Prallethrin	92.6		P	80 - 120
Tau-Fluvalinate	89.7		P	80 - 120
Tetramethrin	120		P	80 - 120
Trans-Nonachlor	95.6		P	80 - 120
Triclosan Methyl	101		P	80 - 120
Trifluralin	113		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120363
Included Lab Sample IDs: 2421665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.8	100	P/P	90 - 110
Arsenic	101	99.8	P/P	90 - 110
Barium	101	99.9	P/P	90 - 110
Beryllium	99.2	98.0	P/P	90 - 110
Boron	96.9	98.1	P/P	90 - 110
Cadmium	98.9	100	P/P	90 - 110
Chromium	98.0	97.3	P/P	90 - 110
Cobalt	98.5	96.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120363
Included Lab Sample IDs: 2421665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	98.9	97.0	P/P	90 - 110
Lead	91.3	91.7	P/P	90 - 110
Manganese	98.6	97.6	P/P	90 - 110
Molybdenum	99.1	98.9	P/P	90 - 110
Nickel	99.1	97.0	P/P	90 - 110
Selenium	99.9	99.7	P/P	90 - 110
Thallium	99.2	100	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A120374
Included Lab Sample IDs: 2421662

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120441
Included Lab Sample IDs: 2421665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	97.8	99.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A120445
Included Lab Sample IDs: 2421663, 2421664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.2	96.3	P/P	50 - 150
2,4,5-T	92.7	92.3	P/P	50 - 150
Acetaminophen	91.5	87.0	P/P	60 - 160
Acetamiprid	111	105	P/P	50 - 150
Afidopyropen	103	130	P/P	50 - 150
Bentazon	130	121	P/P	50 - 160
Bentazon	142	139	P/P	50 - 160
Benzovindiflupyr	115	108	P/P	50 - 150
Carbamazepine	105	115	P/P	60 - 150
Clothianidin	119	111	P/P	60 - 150
Dinotefuran	122	121	P/P	50 - 150
Diuron	128	132	P/P	60 - 160
Fenuron	111	110	P/P	60 - 150
Fluridone	112	118	P/P	60 - 160
Hydrocodone	122	116	P/P	60 - 150
Ibuprofen	84.2	113	P/P	50 - 160
Imazapyr	93.3	96.8	P/P	50 - 150
Imidacloprid	104	105	P/P	60 - 150
Linuron	107	107	P/P	60 - 150
Mandestrobin	107	111	P/P	50 - 150
MCPP	102	101	P/P	50 - 150
Naproxen	106	129	P/P	50 - 160
Primidone	104	100	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A120445
Included Lab Sample IDs: 2421663, 2421664

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	118	117	P/P	60 - 150
Silvex	98.4	103	P/P	50 - 150
Thiamethoxam	102	94.7	P/P	50 - 150
Tolfenpyrad	95.7	108	P/P	60 - 150
Triclopyr	97.8	112	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120540
Included Lab Sample IDs: 2421665

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	98.4	P/P	90 - 110

Reference Method: EPA 8276
Run ID: A120633
Included Lab Sample IDs: 2421662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.7		P	80 - 120
Toxaphene	98.6		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			Precision		
						LCS	SMP	MS
EPA 200.7 Rev. 4.4	Calcium	99.0	100	101				0.621
	Iron	101	101	99.7	98.9			0.639
	Magnesium	101	102	101	102			0.568
	Potassium	101	99.8	99.9	98.5			0.0469
	Sodium	100	100	101				0.0013
	Strontium	97.7	99.1	98.9	97.6			0.224
	Tin	98.7	101	99.1	97.5			1.97
	Titanium	97.3	98.0	97.5	90.5			0.545
	Vanadium	96.6	98.8	98.7	97.4			0.140
	Zinc	97.6	101	99.9	99.1			0.867
EPA 200.8 Rev. 5.4	Aluminum	98.4	95.9	96.0	99.3			0.139
	Antimony	101	101	111	98.8			8.95
	Arsenic	100	100	110	97.4			9.09
	Barium	103	103	113	102			6.79
	Beryllium	100	97.2	105	94.8			7.12
	Boron	102	103	114	104			8.13
	Cadmium	99.3	100	109	98.7			8.34
	Chromium	95.0	97.3	107	94.7			9.60
	Cobalt	98.4	97.1	107	94.9			9.47
	Copper	98.2	99.5	110	95.8			10.4
	Lead	92.6	93.4	102	91.8			8.87
	Manganese	97.1	96.1	106	93.1			4.11
	Molybdenum	99.1	99.2	108	95.7			8.84
	Nickel	98.6	99.2	109	97.9			9.48
	Selenium	102	102	109	96.0			6.13
	Silver	98.3	99.3	106	103			6.34
	Thallium	100	104	113	101			8.21
EPA 8270E	Aldrin	49.6	48.3	52.8				8.98
	Alpha-BHC	82.7	73.5	88.4				18.5
	Alpha-Chlordane	46.7	77.0	76.1				1.21
	Beta-BHC	80.1	61.3	110				56.9
	Beta-Cyfluthrin	57.2	40.2	43.7				8.42
	Bifenthrin	61.2	45.9	51.5				11.6
	Chlorothalonil	97.5	70.7	68.0				3.89
	Cis-Nonachlor	95.0	56.4	63.2				11.2
	Cypermethrin	51.1	46.1	50.6				9.29
	Dacthal	94.8	77.2	114				38.2
	DDD-p,p'	47.5	54.8	51.1				6.99
	DDE-p,p'	49.6	54.0	44.2				19.9
	DDT-p,p'	72.0	60.1	66.1				9.50
	Delta-BHC	67.3	78.3	97.1				21.4
	Deltamethrin	55.7	47.3	53.4				12.2
	Dichlobenil	67.6	50.1	63.7				24.0
	Dicofol	78.2	67.5	93.4				32.1
	Dieldrin	88.5						0.898
	Endosulfan I	64.5	71.1	125				54.7
	Endosulfan II	53.1	60.2	54.4				10.1
	Endosulfan Sulfate	67.9	61.0	68.4				11.5
	Endrin	81.5	56.7	57.8				1.97
	Endrin Aldehyde	71.9	63.1	52.9				17.5
	Endrin Ketone	73.0	76.2	60.2				23.4
	Esfenvalerate	53.4	58.3	56.8				2.69
	Ethalfluralin	54.3	65.7	55.5				16.9
	Fenpropathrin	82.4	56.9	62.7				9.65

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8270E	Gamma-BHC	85.0	96.0	143			39.2
	Gamma-Chlordane	48.6	60.9	68.3			10.3
	Heptachlor	81.2	67.1	71.2			5.93
	Heptachlor Epoxide	56.2	75.0	61.9			8.62
	Hexachlorobenzene	71.9	72.8	91.8			23.1
	Kepone	73.3	40.8	68.7			51.0
	Lambda-Cyhalothrin	41.0	46.1	49.1			6.39
	Methoprene	36.0	41.5	34.1			19.5
	Methoxychlor	75.2	57.8	77.9			29.6
	MGK-264	79.9	55.9	107			63.0
	Mirex	58.0	39.0	40.0			2.45
	Oxychlordane	44.3	64.9	68.5			5.50
	PCB-1016	76.7	82.8	73.9			11.4
	PCB-1260	71.1	82.4	66.7			21.0
	Permethrin	52.4	46.0	41.2			11.1
	Phenothrin	56.6	67.6	79.0			15.5
	Piperonyl Butoxide	84.8	62.7	74.3			17.1
	Prallethrin	65.1	67.3	68.6			1.80
	Tau-Fluvalinate	51.6	53.5	54.6			2.06
	Tetramethrin	75.6	71.9	77.1			6.97
	Trans-Nonachlor	78.6	66.3	75.3			12.8
	Triclosan Methyl	64.9	71.9	93.0			25.6
	Trifluralin	70.3	63.4	67.4			6.05
EPA 8276	Chlordane	78.7	34.7	36.3			4.69
	Toxaphene	88.8	43.3	38.7			8.93
EPA 8321B	2,4-D	92.7	81.0	89.8			6.91
	2,4,5-T	87.2	101	94.0			7.63
	Acesulfame K	105	110	113			3.03
	Acetaminophen	65.5	66.6	64.0			3.97
	Acetamiprid	73.2	62.4	61.8			0.884
	Afidopyropen	54.3	62.5	65.2			4.14
	AMPA	80.7	136	124			9.17
	Bentazon	121					10.5
	Benzovindiflupyr	75.6	77.1	79.8			3.42
	Carbamazepine	72.2	50.2	49.1			1.74
	Clothianidin	87.9	77.5	75.2			2.80
	Dinotefuran	95.0	79.0	73.2			6.98
	Diuron	81.8	31.8	34.4			6.69
	Endothall	71.5	74.5	71.9			3.45
	Fenuron	85.3	65.9	63.8			3.32
	Fluridone	82.7					3.71
	Glufosinate	119	124	143			13.7
	Glyphosate	125	124	123			0.793
	Hydrocodone	89.1	65.5	62.3			5.12
	Ibuprofen	67.0	66.1	56.4			15.8
	Imazapyr	76.8					4.16
	Imidacloprid	83.5	110	106			3.58
	Linuron	72.1	57.5	54.7			4.93
	Mandestrobin	88.2	83.7	81.6			2.53
	MCPP	96.6	99.3	103			3.44
	Naproxen	68.0	96.0	98.4			2.47
	Primidone	75.6	76.2	73.4			3.28
	Pyraclostrobin	68.0	80.3	79.6			0.854
	Silvex	97.7	88.9	83.2			6.71

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Sucralose	89.4	94.8	98.2			3.42
	Thiamethoxam	67.7	56.7	55.3			2.02
	Tolfenpyrad	42.2	48.5	47.3			2.54
	Triclopyr	89.6	102	91.5			10.5

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	2421665
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2421665
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2421662
EPA 8270E	PCBs in water matrices by GC/MS/MS	2421662
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2421662
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2421663, 2421664
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2421665

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	07/06/2023	07/12/2023 13:10	George D Taylor	07/13/2023 17:46	McKinley C Carter	2421665
EPA 200.8 Rev. 5.4	07/06/2023	07/12/2023 13:10	George D Taylor	07/13/2023 14:18	Emily M Philpot	2421665
	07/06/2023	07/14/2023 12:55	George D Taylor	07/17/2023 14:24	Conrad Hartmann	2421665
	07/06/2023	07/19/2023 13:40	George D Taylor	07/20/2023 16:42	Conrad Hartmann	2421665
EPA 8270E	07/06/2023	07/10/2023 08:00	Fe-Val Siddell	07/12/2023 21:33	Michael Poppell	2421662
	07/06/2023	07/10/2023 08:00	Fe-Val Siddell	07/13/2023 01:35	Lipi Saha	2421662
EPA 8276	07/06/2023	07/20/2023 08:30	Rasheda Ghaffari	07/25/2023 12:35	Arthur Maknenko	2421662
EPA 8321B	07/06/2023	07/11/2023 12:30	Hana Lee	07/11/2023 15:35	Hana Lee	2421663
	07/06/2023	07/11/2023 12:30	Hana Lee	07/11/2023 16:01	Hana Lee	2421664
	07/06/2023	07/11/2023 12:30	Hana Lee	07/12/2023 00:16	Hana Lee	2421663
	07/06/2023	07/11/2023 12:30	Hana Lee	07/12/2023 00:44	Hana Lee	2421664
	07/06/2023	07/12/2023 08:30	Hoor Shaik	07/17/2023 22:15	Juyoung Kim	2421664
	07/06/2023	07/12/2023 08:30	Hoor Shaik	07/17/2023 22:34	Juyoung Kim	2421663
	07/06/2023	07/12/2023 08:30	Hoor Shaik	07/18/2023 17:52	Juyoung Kim	2421664
SM 2340 B-2011	07/06/2023			07/13/2023 17:46	McKinley C Carter	2421665