

Chemical Analysis Report

SO-DIST-2023-11-17-01

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

Event Description: **2023 SMP: SO CO OH NO**
Request ID: **RQ-2023-11-27-22**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 14-DEC-2023 11:05



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: CANAL AT PLANTATIONPKWY

Collection Date/Time: 11/16/2023 13:00

Field ID: G1SD0126

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452161	EPA 8321B	Acesulfame K	0.10	U	ug/L	P437906	
		2,4-D	0.0020	U	ug/L	P437953	
		AMPA	1.0	U	ug/L	P437906	
		2,4,5-T	0.0040	U	ug/L	P437953	
		Acetaminophen	0.0080	U	ug/L	P437953	
		Endothall	0.25	U	ug/L	P437906	
		Acetamiprid	0.0020	U	ug/L	P437953	
		Glufosinate	1.0	U	ug/L	P437906	
		Glyphosate	1.0	U	ug/L	P437906	
		Afidopyropen	0.0020	U	ug/L	P437953	
		Sucralose	0.030	I	ug/L	P437906	
		Bentazon	8.0E-04	U	ug/L	P437953	
		Benzovindiflupyr	0.0020	U	ug/L	P437953	
		Carbamazepine	8.0E-04	U	ug/L	P437953	
		Clothianidin	0.0020	U	ug/L	P437953	
		Dinotefuran	0.0020	U	ug/L	P437953	
		Diuron	0.0020	U	ug/L	P437953	
		Fenuron	0.032	U	ug/L	P437953	
		Fluridone	8.0E-04	U	ug/L	P437953	
		Imazapyr	0.0059	I	ug/L	P437953	
		Hydrocodone	0.0020	U	ug/L	P437953	
		Ibuprofen	0.080	U	ug/L	P437953	
		Imidacloprid	0.0020	U	ug/L	P437953	
		Linuron	0.0040	U	ug/L	P437953	
		Mandestrobin	0.0020	U	ug/L	P437953	
		MCPP	0.0020	U	ug/L	P437953	
		Naproxen	0.0080	U	ug/L	P437953	
		Primidone	0.0040	U	ug/L	P437953	
		Pyraclostrobin	0.0020	U	ug/L	P437953	
		Silvex	0.0040	U	ug/L	P437953	
		Thiamethoxam	0.0020	U	ug/L	P437953	
		Tolfenpyrad	0.0020	U	ug/L	P437953	
		Triclopyr	0.0040	U	ug/L	P437953	

Ref. Method and Comment:

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

EPA 8321B: The matrix spike and LCS recoveries for afidopyropen could not be evaluated due to laboratory technical difficulties.

Sample Location: PORT OF THE ISLANDS MARINA

Collection Date/Time: 11/16/2023 13:30

Field ID: G1SD0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452162	EPA 200.7 Rev. 4.4	Calcium	114		mg/L	P438057	
		Iron	150		ug/L	P438057	
		Magnesium	49.4		mg/L	P438057	
		Potassium	14.9		mg/L	P438057	
		Sodium	392		mg/L	P438057	
		Strontium	542		ug/L	P438057	
		Tin	3.0	U	ug/L	P438057	
		Titanium	0.87	I	ug/L	P438057	
		Vanadium	2.4	I	ug/L	P438057	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P438057	
		Aluminum	13	I	ug/L	P438057	
		Antimony	0.15	I	ug/L	P438057	
		Arsenic	1.05		ug/L	P438057	
		Barium	16.1		ug/L	P438057	
		Beryllium	0.015	I	ug/L	P438057	
		Boron	161		ug/L	P438057	
		Cadmium	0.020	U	ug/L	P438057	
		Chromium	0.45	I	ug/L	P438057	
		Cobalt	0.063	I	ug/L	P438057	
		Copper	1.84		ug/L	P438057	
		Lead	0.20	U	ug/L	P438057	
		Manganese	12.7		ug/L	P438057	
		Molybdenum	1.57		ug/L	P438057	
		Nickel	0.50	U	ug/L	P438057	
		Selenium	0.20	U	ug/L	P438057	
		Silver	0.010	U	ug/L	P438057	
		Thallium	0.10	U	ug/L	P438057	
	SM 2340 B-2011	Hardness	488		mg/L	P438057	

Sample Location: TAMTOM

Collection Date/Time: 11/16/2023 14:00

Field ID: G1SD0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452152	EPA 8270E	Aldrin	0.67	U	ng/L	P438105	
		Alpha-BHC	0.10	U	ng/L	P438105	MS
		Alpha-Chlordane	0.21	U	ng/L	P438105	
		PCB-1016	2.1	U	ng/L	P438105	
		Beta-BHC	0.10	U	ng/L	P438105	
		PCB-1221	2.1	U	ng/L	P438105	
		Beta-Cyfluthrin	1.3	U	ng/L	P438105	MS
		PCB-1232	2.1	U	ng/L	P438105	
		Bifenthrin	0.52	U	ng/L	P438105	
		PCB-1242	2.1	U	ng/L	P438105	
		PCB-1248	2.1	U	ng/L	P438105	
		Chlorothalonil	3.7	U	ng/L	P438105	
		PCB-1254	2.1	U	ng/L	P438105	
		Cis-Nonachlor	0.21	U	ng/L	P438105	
		PCB-1260	2.1	U	ng/L	P438105	
		Cypermethrin	1.5	U	ng/L	P438105	
		Dacthal	0.15	UJ	ng/L	P438105	LCS
		DDD-p,p'	0.26	U	ng/L	P438105	
		DDE-p,p'	0.21	U	ng/L	P438105	
		DDT-p,p'	0.82	U	ng/L	P438105	
		Delta-BHC	0.41	UJ	ng/L	P438105	LCS
		Deltamethrin	1.3	U	ng/L	P438105	
		Dichlobenil	0.26	U	ng/L	P438105	
		Dicofol	1.3	U	ng/L	P438105	
		Dieldrin	0.41	UJ	ng/L	P438105	LCS
		Endosulfan I	0.41	U	ng/L	P438105	
		Endosulfan II	0.93	U	ng/L	P438105	
		Endosulfan Sulfate	0.31	U	ng/L	P438105	
		Endrin	0.93	U	ng/L	P438105	
		Endrin Aldehyde	0.77	U	ng/L	P438105	
		Endrin Ketone	0.41	U	ng/L	P438105	MS
		Esfenvalerate	0.77	U	ng/L	P438105	
		Ethalfuralin	0.15	UJ	ng/L	P438105	LCS, MS
		Fenpropathrin	0.26	U	ng/L	P438105	
		Gamma-BHC	0.13	UJ	ng/L	P438105	LCS, MS
		Gamma-Chlordane	0.21	U	ng/L	P438105	
		Heptachlor	0.21	U	ng/L	P438105	
		Heptachlor Epoxide	0.26	UJ	ng/L	P438105	LCS
		Hexachlorobenzene**	1.0	U	ng/L	P438105	
		Kepone	14	U	ng/L	P438105	
		Lambda-Cyhalothrin	0.77	U	ng/L	P438105	
		Methoprene	0.77	U	ng/L	P438105	
		Methoxychlor	0.31	U	ng/L	P438105	
		MGK-264	0.21	U	ng/L	P438105	

Field ID: G1SD0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452152	EPA 8270E	Mirex	0.36	U	ng/L	P438105	LCS, MS
		Oxychlordane	0.31	UJ	ng/L	P438105	
		Permethrin	1.6	U	ng/L	P438105	
		Phenothrin	0.93	U	ng/L	P438105	
		Piperonyl Butoxide	0.29	I	ng/L	P438105	
		Prallethrin	2.1	U	ng/L	P438105	
		Tau-Fluvalinate	0.26	U	ng/L	P438105	
		Tetramethrin	0.77	U	ng/L	P438105	
		Trans-Nonachlor	0.21	U	ng/L	P438105	
		Triclosan Methyl	0.15	UJ	ng/L	P438105	
		Trifluralin	0.21	UJ	ng/L	P438105	
		Chlordane	2.1	U	ng/L	P438105	
		Toxaphene	15	U	ng/L	P438105	
	EPA 8276						

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438057

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: P438057

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: P438105

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P438105

Component	Result	Code	Units
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P438105

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

Reference Method: EPA 8321B

Batch ID: P437906

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P437906

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: P437953

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: P438057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	104		P	85 - 115
Magnesium	99.4		P	85 - 115
Potassium	100		P	85 - 115
Sodium	99.2		P	85 - 115
Strontium	100		P	85 - 115
Tin	97.5		P	85 - 115
Titanium	99.3		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	100		P	85 - 115
Barium	102		P	85 - 115
Beryllium	96.1		P	85 - 115
Boron	103		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	96.2		P	85 - 115
Copper	100		P	85 - 115
Lead	94.3		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	97.7		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.4		P	85 - 115
Silver	100		P	85 - 115
Thallium	96.8		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	42.0		P	30 - 96.0
Alpha-BHC	71.4		P	70 - 109
Alpha-Chlordane	45.7		P	45 - 107
Beta-BHC	76.6		P	64 - 138
Beta-Cyfluthrin	126		P	17 - 141
Bifenthrin	27.6		P	10 - 113
Chlorothalonil	70.4		P	26 - 180
Cis-Nonachlor	43.4		P	37 - 102
Cypermethrin	45.8		P	20 - 133
Dacthal	68.6		F	69 - 114
DDD-p,p'	43.1		P	42 - 105
DDE-p,p'	49.3		P	42 - 106
DDT-p,p'	50.5		P	42 - 107
Delta-BHC	64.7		F	67 - 144
Deltamethrin	63.6		P	15 - 149

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	54.0		P	46 - 117
Dicofol	55.9		P	34 - 114
Dieldrin	48.0		F	50 - 108
Endosulfan I	56.9		P	55 - 104
Endosulfan II	65.4		P	51 - 111
Endosulfan Sulfate	65.6		P	56 - 121
Endrin	43.0		P	10 - 106
Endrin Aldehyde	37.8		P	34 - 114
Endrin Ketone	160		P	63 - 177
Esfenvalerate	52.6		P	29 - 143
Ethalfuralin	36.6		F	46 - 96.0
Fenpropathrin	47.1		P	28 - 115
Gamma-BHC	58.1		F	65 - 121
Gamma-Chlordane	39.0		P	39 - 103
Heptachlor	45.0		P	39 - 94.0
Heptachlor Epoxide	42.8		F	54 - 104
Hexachlorobenzene	36.5		P	36 - 100
Kepone	74.6		P	10 - 225
Lambda-Cyhalothrin	32.7		P	10 - 135
Methoprene	53.7		P	10 - 109
Methoxychlor	55.8		P	52 - 112
MGK-264	64.0		P	44 - 117
Mirex	24.0		P	20 - 90.0
Oxychlordane	127		F	44 - 102
PCB-1016	63.5		P	45 - 107
PCB-1260	76.2		P	40 - 118
Permethrin	36.9		P	18 - 135
Phenothrin	37.3		P	10 - 102
Piperonyl Butoxide	57.5		P	28 - 156
Prallethrin	51.8		P	28 - 113
Tau-Fluvalinate	52.7		P	10 - 123
Tetramethrin	58.8		P	18 - 158
Trans-Nonachlor	43.8		P	39 - 104
Triclosan Methyl	134		F	54 - 108
Trifluralin	34.0		F	46 - 97.0

Reference Method: EPA 8276
Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	56.7		P	52 - 117
Toxaphene	62.1		P	44 - 125

Reference Method: EPA 8321B
Batch ID: P437906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	130		P	40 - 150
AMPA	90.5		P	40 - 160
Endothall	104		P	40 - 160
Glufosinate	97.4		P	40 - 160
Glyphosate	97.3		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	120		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.1		P	40 - 150
2,4,5-T	61.7		P	40 - 150
Acetaminophen	82.3		P	30 - 150
Acetamiprid	61.5		P	40 - 150
Bentazon	56.7		P	30 - 150
Benzovindiflupyr	76.9		P	40 - 150
Carbamazepine	63.3		P	40 - 150
Clothianidin	80.2		P	40 - 150
Dinotefuran	66.1		P	40 - 150
Diuron	62.2		P	40 - 150
Fenuron	78.6		P	40 - 150
Fluridone	77.4		P	40 - 150
Hydrocodone	96.1		P	40 - 150
Ibuprofen	51.3		P	40 - 150
Imazapyr	75.3		P	40 - 150
Imidacloprid	76.7		P	40 - 150
Linuron	60.7		P	40 - 150
Mandestrobin	79.3		P	40 - 150
MCPP	66.7		P	40 - 150
Naproxen	45.3		P	40 - 150
Primidone	75.0		P	40 - 150
Pyraclostrobin	83.9		P	40 - 150
Silvex	70.0		P	40 - 150
Thiamethoxam	78.2		P	40 - 150
Tolfenpyrad	45.5		P	30 - 150
Triclopyr	67.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452107	Calcium	95.8		P	80 - 120
2452107	Iron	97.5	99.2	P/P	80 - 120
2452107	Magnesium	95.3		P	80 - 120
2452107	Potassium	94.9	98.0	P/P	80 - 120
2452107	Sodium	98.2		P	80 - 120
2452107	Strontium	95.4	98.5	P/P	80 - 120
2452107	Tin	94.9	96.0	P/P	80 - 120
2452107	Titanium	96.5	98.1	P/P	80 - 120
2452107	Vanadium	96.7	99.1	P/P	80 - 120
2452107	Zinc	93.4	95.7	P/P	80 - 120
2452139	Calcium	99.7		P	80 - 120
2452139	Iron	101		P	80 - 120
2452139	Magnesium	100		P	80 - 120
2452139	Potassium	95.8		P	80 - 120
2452139	Sodium	98.9		P	80 - 120
2452139	Strontium	97.5		P	80 - 120
2452139	Tin	95.5		P	80 - 120
2452139	Titanium	96.1		P	80 - 120
2452139	Vanadium	101		P	80 - 120
2452139	Zinc	98.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452107	Aluminum	101	100	P/P	80 - 120
2452107	Antimony	102	100	P/P	80 - 120
2452107	Arsenic	101	99.4	P/P	80 - 120
2452107	Barium	102	101	P/P	80 - 120
2452107	Beryllium	94.7	92.5	P/P	80 - 120
2452107	Boron	105	107	P/P	80 - 120
2452107	Cadmium	100	99.0	P/P	80 - 120
2452107	Chromium	101	102	P/P	80 - 120
2452107	Cobalt	94.1	93.1	P/P	80 - 120
2452107	Copper	97.9	96.2	P/P	80 - 120
2452107	Lead	95.7	94.6	P/P	80 - 120
2452107	Manganese	101	99.5	P/P	80 - 120
2452107	Molybdenum	101	99.3	P/P	80 - 120
2452107	Nickel	97.2	96.8	P/P	80 - 120
2452107	Selenium	95.9	93.3	P/P	80 - 120
2452107	Silver	100	99.9	P/P	80 - 120
2452107	Thallium	98.3	97.4	P/P	80 - 120
2452139	Aluminum	101		P	80 - 120
2452139	Antimony	101		P	80 - 120
2452139	Arsenic	101		P	80 - 120
2452139	Barium	102		P	80 - 120
2452139	Beryllium	95.7		P	80 - 120
2452139	Boron	106		P	80 - 120
2452139	Cadmium	99.0		P	80 - 120
2452139	Chromium	100		P	80 - 120
2452139	Cobalt	92.9		P	80 - 120
2452139	Copper	96.2		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452139	Lead	95.9		P	80 - 120
2452139	Manganese	99.3		P	80 - 120
2452139	Molybdenum	100		P	80 - 120
2452139	Nickel	98.1		P	80 - 120
2452139	Selenium	96.2		P	80 - 120
2452139	Silver	99.3		P	80 - 120
2452139	Thallium	98.7		P	80 - 120

Reference Method: EPA 8270E
Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452172	Aldrin	46.1	53.6	P/P	24 - 81.0
2452172	Alpha-BHC	64.2	72.6	F/P	65 - 110
2452172	Alpha-Chlordane	56.5	55.7	P/P	43 - 119
2452172	Beta-BHC	58.7	54.3	P/P	54 - 165
2452172	Beta-Cyfluthrin	190	205	F/F	27 - 165
2452172	Bifenthrin	30.8	35.5	P/P	17 - 117
2452172	Chlorothalonil	95.4	132	P/P	10 - 255
2452172	Cis-Nonachlor	46.5	50.6	P/P	34 - 98.0
2452172	Cypermethrin	44.0	58.3	P/P	25 - 143
2452172	Dacthal	64.7	68.2	P/P	55 - 139
2452172	DDD-p,p'	49.6	47.6	P/P	30 - 109
2452172	DDE-p,p'	60.8	54.4	P/P	35 - 106
2452172	DDT-p,p'	46.6	55.3	P/P	41 - 101
2452172	Delta-BHC	64.4	61.6	P/P	58 - 165
2452172	Deltamethrin	60.0	82.7	P/P	10 - 194
2452172	Dichlobenil	52.7	43.6	P/P	22 - 114
2452172	Dicofol	61.6	63.4	P/P	17 - 133
2452172	Dieldrin	58.6	55.4	P/P	45 - 129
2452172	Endosulfan I	62.4	63.3	P/P	49 - 104
2452172	Endosulfan II	67.1	69.1	P/P	37 - 117
2452172	Endosulfan Sulfate	68.2	71.9	P/P	38 - 128
2452172	Endrin	55.9	51.1	P/P	35 - 116
2452172	Endrin Aldehyde	40.4	39.0	P/P	19 - 108
2452172	Endrin Ketone	261	215	F/F	44 - 134
2452172	Esfenvalerate	50.6	65.3	P/P	27 - 176
2452172	Ethalfuralin	40.0	36.1	F/F	49 - 100
2452172	Fenpropathrin	42.6	56.3	P/P	34 - 117
2452172	Gamma-BHC	62.1	54.0	P/F	59 - 129
2452172	Gamma-Chlordane	55.5	51.8	P/P	33 - 107
2452172	Heptachlor	51.6	57.3	P/P	37 - 94.0
2452172	Heptachlor Epoxide	41.7	43.8	P/P	38 - 118
2452172	Hexachlorobenzene	42.8	38.9	P/P	35 - 97.0
2452172	Kepone	82.2	93.4	P/P	10 - 221
2452172	Lambda-Cyhalothrin	34.5	44.2	P/P	23 - 190
2452172	Methoprene	50.9	58.5	P/P	21 - 109
2452172	Methoxychlor	50.4	61.9	P/P	46 - 118
2452172	MGK-264	64.8	62.3	P/P	39 - 122
2452172	Mirex	26.9	32.4	P/P	25 - 90.0
2452172	Oxychlordane	201	172	F/F	42 - 100
2452172	Permethrin	38.0	46.1	P/P	33 - 181

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452172	Phenothrin	46.2	44.3	P/P	12 - 125
2452172	Piperonyl Butoxide	45.2	54.6	P/P	10 - 178
2452172	Prallethrin	56.5	49.4	P/P	24 - 122
2452172	Tau-Fluvalinate	50.2	71.0	P/P	13 - 151
2452172	Tetramethrin	51.0	58.4	P/P	16 - 172
2452172	Trans-Nonachlor	61.4	54.9	P/P	39 - 100
2452172	Triclosan Methyl	173	169	F/F	43 - 110
2452172	Trifluralin	46.5	45.3	P/P	45 - 94.0
2452203	PCB-1016	69.8	63.5	P/P	45 - 107
2452203	PCB-1260	92.8	74.3	P/P	40 - 112

Reference Method: EPA 8276

Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452203	Chlordane	66.2	65.4	P/P	43 - 123
2452203	Toxaphene	76.0	79.6	P/P	27 - 156

Reference Method: EPA 8321B

Batch ID: P437906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452037	Acesulfame K	132	132	P/P	40 - 150
2452037	AMPA	88.0	89.8	P/P	40 - 160
2452037	Endothall	97.2	109	P/P	40 - 160
2452037	Glufosinate	94.7	94.7	P/P	40 - 160
2452037	Glyphosate	97.1	90.9	P/P	40 - 160
2452037	Sucralose	125	121	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P437953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452053	2,4-D	96.6	102	P/P	40 - 150
2452053	2,4,5-T	76.0	73.5	P/P	40 - 150
2452053	Acetaminophen	98.9	101	P/P	30 - 150
2452053	Acetamiprid	47.7	45.6	P/P	40 - 150
2452053	Bentazon	33.1	34.2	P/P	30 - 150
2452053	Benzovindiflupyr	78.8	78.3	P/P	40 - 150
2452053	Carbamazepine	55.7	56.1	P/P	40 - 150
2452053	Clothianidin	82.2	83.3	P/P	40 - 150
2452053	Dinotefuran	62.1	63.3	P/P	40 - 150
2452053	Diuron	56.5	55.7	P/P	40 - 150
2452053	Fenuron	56.6	57.9	P/P	40 - 150
2452053	Fluridone	69.7	73.0	P/P	40 - 150
2452053	Hydrocodone	81.7	81.4	P/P	40 - 150
2452053	Ibuprofen	59.4	61.1	P/P	40 - 150
2452053	Imazapyr	92.7	94.4	P/P	40 - 150
2452053	Imidacloprid	101	105	P/P	40 - 150
2452053	Linuron	58.5	59.5	P/P	40 - 150
2452053	Mandestrobin	81.7	83.8	P/P	40 - 150
2452053	MCPP	84.3	80.4	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P437953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452053	Naproxen	71.2	59.4	P/P	40 - 150
2452053	Primidone	77.7	80.4	P/P	40 - 150
2452053	Pyraclostrobin	85.6	82.5	P/P	40 - 150
2452053	Silvex	79.8	71.0	P/P	40 - 150
2452053	Thiamethoxam	83.0	85.4	P/P	40 - 150
2452053	Tolfenpyrad	49.2	47.4	P/P	30 - 150
2452053	Triclopyr	85.3	77.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452107	Calcium	3.58	Spike	P	0 - 20
2452107	Iron	1.73	Spike	P	0 - 20
2452107	Magnesium	1.99	Spike	P	0 - 20
2452107	Potassium	2.03	Spike	P	0 - 20
2452107	Sodium	3.57	Spike	P	0 - 20
2452107	Strontium	3.10	Spike	P	0 - 20
2452107	Tin	1.18	Spike	P	0 - 20
2452107	Titanium	1.66	Spike	P	0 - 20
2452107	Vanadium	2.52	Spike	P	0 - 20
2452107	Zinc	2.46	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452107	Aluminum	0.505	Spike	P	0 - 20
2452107	Antimony	1.50	Spike	P	0 - 20
2452107	Arsenic	1.64	Spike	P	0 - 20
2452107	Barium	1.02	Spike	P	0 - 20
2452107	Beryllium	2.35	Spike	P	0 - 20
2452107	Boron	1.49	Spike	P	0 - 20
2452107	Cadmium	1.24	Spike	P	0 - 20
2452107	Chromium	0.833	Spike	P	0 - 20
2452107	Cobalt	1.04	Spike	P	0 - 20
2452107	Copper	1.70	Spike	P	0 - 20
2452107	Lead	1.12	Spike	P	0 - 20
2452107	Manganese	1.71	Spike	P	0 - 20
2452107	Molybdenum	1.30	Spike	P	0 - 20
2452107	Nickel	0.455	Spike	P	0 - 20
2452107	Selenium	2.72	Spike	P	0 - 20
2452107	Silver	0.313	Spike	P	0 - 20
2452107	Thallium	0.879	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452172	Aldrin	14.9	Spike	P	0 - 41
2452172	Alpha-BHC	12.3	Spike	P	0 - 25
2452172	Alpha-Chlordane	1.39	Spike	P	0 - 32
2452172	Beta-BHC	7.66	Spike	P	0 - 33
2452172	Beta-Cyfluthrin	7.75	Spike	P	0 - 43
2452172	Bifenthrin	14.4	Spike	P	0 - 52
2452172	Chlorothalonil	32.1	Spike	P	0 - 82
2452172	Cis-Nonachlor	8.34	Spike	P	0 - 33
2452172	Cypermethrin	28.0	Spike	P	0 - 51
2452172	Dacthal	5.23	Spike	P	0 - 27
2452172	DDD-p,p'	4.23	Spike	P	0 - 39
2452172	DDE-p,p'	11.1	Spike	P	0 - 31

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452172	DDT-p,p'	17.0	Spike	P	0 - 29
2452172	Delta-BHC	4.54	Spike	P	0 - 35
2452172	Deltamethrin	31.7	Spike	P	0 - 100
2452172	Dichlobenil	18.9	Spike	P	0 - 40
2452172	Dicofol	2.84	Spike	P	0 - 37
2452172	Dieldrin	5.58	Spike	P	0 - 27
2452172	Endosulfan I	1.46	Spike	P	0 - 23
2452172	Endosulfan II	2.95	Spike	P	0 - 34
2452172	Endosulfan Sulfate	5.30	Spike	P	0 - 36
2452172	Endrin	8.90	Spike	P	0 - 45
2452172	Endrin Aldehyde	3.64	Spike	P	0 - 76
2452172	Endrin Ketone	19.0	Spike	P	0 - 43
2452172	Esfenvalerate	25.5	Spike	P	0 - 51
2452172	Ethalfuralin	10.2	Spike	P	0 - 22
2452172	Fenpropathrin	27.8	Spike	P	0 - 49
2452172	Gamma-BHC	14.0	Spike	P	0 - 28
2452172	Gamma-Chlordane	6.90	Spike	P	0 - 40
2452172	Heptachlor	10.4	Spike	P	0 - 29
2452172	Heptachlor Epoxide	4.89	Spike	P	0 - 33
2452172	Hexachlorobenzene	9.66	Spike	P	0 - 36
2452172	Kepone	12.7	Spike	P	0 - 85
2452172	Lambda-Cyhalothrin	24.8	Spike	P	0 - 55
2452172	Methoprene	13.9	Spike	P	0 - 53
2452172	Methoxychlor	20.5	Spike	P	0 - 50
2452172	MGK-264	4.06	Spike	P	0 - 43
2452172	Mirex	18.8	Spike	P	0 - 40
2452172	Oxychlordane	15.4	Spike	P	0 - 31
2452172	Permethrin	19.1	Spike	P	0 - 50
2452172	Phenothrin	4.19	Spike	P	0 - 58
2452172	Piperonyl Butoxide	17.3	Spike	P	0 - 100
2452172	Prallethrin	13.5	Spike	P	0 - 39
2452172	Tau-Fluvalinate	34.3	Spike	P	0 - 54
2452172	Tetramethrin	13.4	Spike	P	0 - 51
2452172	Trans-Nonachlor	11.2	Spike	P	0 - 39
2452172	Triclosan Methyl	2.41	Spike	P	0 - 31
2452172	Trifluralin	2.58	Spike	P	0 - 22
2452203	PCB-1016	9.47	Spike	P	0 - 25
2452203	PCB-1260	22.2	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452203	Chlordane	1.15	Spike	P	0 - 28
2452203	Toxaphene	4.65	Spike	P	0 - 27

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P437906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452037	Acesulfame K	0.406	Spike	P	0 - 30
2452037	AMPA	2.03	Spike	P	0 - 30
2452037	Endothall	11.3	Spike	P	0 - 30
2452037	Glufosinate	0.0182	Spike	P	0 - 30
2452037	Glyphosate	6.52	Spike	P	0 - 30
2452037	Sucralose	3.23	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P437953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452053	2,4-D	5.06	Spike	P	0 - 30
2452053	2,4,5-T	3.35	Spike	P	0 - 30
2452053	Acetaminophen	2.55	Spike	P	0 - 30
2452053	Acetamiprid	4.33	Spike	P	0 - 30
2452053	Bentazon	3.36	Spike	P	0 - 30
2452053	Benzovindiflupyr	0.572	Spike	P	0 - 30
2452053	Carbamazepine	0.752	Spike	P	0 - 30
2452053	Clothianidin	1.26	Spike	P	0 - 30
2452053	Dinotefuran	2.02	Spike	P	0 - 30
2452053	Diuron	1.33	Spike	P	0 - 30
2452053	Fenuron	2.23	Spike	P	0 - 30
2452053	Fluridone	4.66	Spike	P	0 - 30
2452053	Hydrocodone	0.414	Spike	P	0 - 30
2452053	Ibuprofen	2.76	Spike	P	0 - 30
2452053	Imazapyr	1.83	Spike	P	0 - 30
2452053	Imidacloprid	3.00	Spike	P	0 - 30
2452053	Linuron	1.68	Spike	P	0 - 30
2452053	Mandestrobin	2.57	Spike	P	0 - 30
2452053	MCPP	4.67	Spike	P	0 - 30
2452053	Naproxen	18.0	Spike	P	0 - 30
2452053	Primidone	3.48	Spike	P	0 - 30
2452053	Pyraclostrobin	3.67	Spike	P	0 - 30
2452053	Silvex	11.7	Spike	P	0 - 30
2452053	Thiamethoxam	2.85	Spike	P	0 - 30
2452053	Tolfenpyrad	3.72	Spike	P	0 - 30
2452053	Triclopyr	9.41	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2452152
Field Sample ID: G1SD0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	80.3	P	37 - 129
EPA 8270E	Decachlorobiphenyl	41.7	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	62.4	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	33.7	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	61.0	P	28 - 102
EPA 8276	PCNB	83.3	P	49 - 115

Lab Sample ID: 2452161
Field Sample ID: G1SD0126

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.1	P	30 - 160
EPA 8321B	Diuron-d6	54.0	P	30 - 160
EPA 8321B	Endothall-d6	73.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.9	P	30 - 160
EPA 8321B	Primidone-d5	58.1	P	30 - 160
EPA 8321B	Sucralose-d6	82.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A122799
Included Lab Sample IDs: 2452161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.4	90.1	P/P	60 - 160
Endothall	111	87.5	P/P	60 - 160
Glufosinate	91.0	90.6	P/P	60 - 160
Glyphosate	92.4	90.3	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A122812
Included Lab Sample IDs: 2452161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	131	150	P/P	60 - 160
Sucralose	118	126	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122877
Included Lab Sample IDs: 2452162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.3	97.4	P/P	90 - 110
Iron	95.9	95.5	P/P	90 - 110
Magnesium	95.2	95.4	P/P	90 - 110
Potassium	95.2	94.4	P/P	90 - 110
Sodium	97.2	97.2	P/P	90 - 110
Strontium	101	95.6	P/P	90 - 110
Tin	98.0	92.9	P/P	90 - 110
Titanium	98.1	94.2	P/P	90 - 110
Vanadium	99.2	95.0	P/P	90 - 110
Zinc	101	96.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A122879
Included Lab Sample IDs: 2452162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	98.7	98.1	P/P	90 - 110
Arsenic	100	99.0	P/P	90 - 110
Barium	99.3	99.4	P/P	90 - 110
Beryllium	96.6	97.8	P/P	90 - 110
Boron	102	105	P/P	90 - 110
Chromium	102	101	P/P	90 - 110
Cobalt	92.7	91.3	P/P	90 - 110
Copper	96.6	94.6	P/P	90 - 110
Lead	95.4	96.7	P/P	90 - 110
Manganese	99.1	97.6	P/P	90 - 110
Molybdenum	99.4	98.5	P/P	90 - 110
Nickel	99.1	99.0	P/P	90 - 110
Silver	94.8	93.8	P/P	90 - 110
Thallium	94.5	94.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122898

Included Lab Sample IDs: 2452162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122924

Included Lab Sample IDs: 2452162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	99.6	97.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122934

Included Lab Sample IDs: 2452161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.3	97.5	P/P	50 - 150
2,4,5-T	94.4	86.9	P/P	50 - 150
Acetaminophen	113	111	P/P	60 - 160
Acetamiprid	107	107	P/P	50 - 150
Afidopyropen	98.7	93.6	P/P	50 - 150
Bentazon	93.7	94.1	P/P	50 - 160
Benzovindiflupyr	103	101	P/P	50 - 150
Carbamazepine	105	108	P/P	60 - 150
Clothianidin	101	106	P/P	60 - 150
Dinotefuran	109	107	P/P	50 - 150
Diuron	113	116	P/P	60 - 160
Fenuron	106	106	P/P	60 - 150
Fluridone	105	119	P/P	60 - 160
Hydrocodone	112	115	P/P	60 - 150
Ibuprofen	71.6	75.3	P/P	50 - 160
Imazapyr	92.7	92.4	P/P	50 - 150
Imidacloprid	100	94.1	P/P	60 - 150
Linuron	95.9	106	P/P	60 - 150
Mandestrobin	112	110	P/P	50 - 150
MCPP	103	95.0	P/P	50 - 150
Naproxen	83.1	112	P/P	50 - 160
Primidone	101	92.3	P/P	60 - 150
Pyraclostrobin	115	115	P/P	60 - 150
Silvex	104	95.1	P/P	50 - 150
Thiamethoxam	109	108	P/P	50 - 150
Tolfenpyrad	101	97.6	P/P	60 - 150
Triclopyr	99.8	97.3	P/P	50 - 150

Reference Method: EPA 8270E

Run ID: A123074

Included Lab Sample IDs: 2452152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	91.7		P	80 - 120
PCB-1260	107		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A123139
Included Lab Sample IDs: 2452152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	114		P	80 - 120
Alpha-BHC	97.9		P	80 - 120
Alpha-Chlordane	100		P	80 - 120
Beta-BHC	94.1		P	80 - 120
Beta-Cyfluthrin	99.9		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	100		P	80 - 120
Cis-Nonachlor	101		P	80 - 120
Cypermethrin	102		P	80 - 120
Dacthal	95.3		P	80 - 120
DDD-p,p'	98.5		P	80 - 120
DDE-p,p'	107		P	80 - 120
DDT-p,p'	93.2		P	80 - 120
Delta-BHC	95.7		P	80 - 120
Deltamethrin	97.9		P	80 - 120
Dichlobenil	89.2		P	80 - 120
Dicofol	90.3		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	98.5		P	80 - 120
Endosulfan II	97.7		P	80 - 120
Endosulfan Sulfate	101		P	80 - 120
Endrin	98.1		P	80 - 120
Endrin Aldehyde	101		P	80 - 120
Endrin Ketone	102		P	80 - 120
Esfenvalerate	99.7		P	80 - 120
Ethalfuralin	90.4		P	80 - 120
Fenpropathrin	103		P	80 - 120
Gamma-BHC	94.0		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	119		P	80 - 120
Heptachlor Epoxide	106		P	80 - 120
Hexachlorobenzene	99.7		P	80 - 120
Kepone	91.9		P	80 - 120
Lambda-Cyhalothrin	102		P	80 - 120
Methoprene	95.8		P	80 - 120
Methoxychlor	104		P	80 - 120
MGK-264	95.8		P	80 - 120
Mirex	99.8		P	80 - 120
Oxychlordane	108		P	80 - 120
Permethrin	98.9		P	80 - 120
Phenothrin	95.3		P	80 - 120
Piperonyl Butoxide	102		P	80 - 120
Prallethrin	98.3		P	80 - 120
Tau-Fluvalinate	105		P	80 - 120
Tetramethrin	101		P	80 - 120
Trans-Nonachlor	105		P	80 - 120
Triclosan Methyl	109		P	80 - 120
Trifluralin	103		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8276
Run ID: A123154
Included Lab Sample IDs: 2452152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	91.1		P	80 - 120
Toxaphene	89.6		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 SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	101	95.8	99.7			3.58
	Iron	104	97.5	99.2	101		1.73
	Magnesium	99.4	95.3	100			1.99
	Potassium	100	94.9	98.0	95.8		2.03
	Sodium	99.2	98.2	98.9			3.57
	Strontium	100	95.4	98.5	97.5		3.10
	Tin	97.5	94.9	96.0	95.5		1.18
	Titanium	99.3	96.5	98.1	96.1		1.66
	Vanadium	100	96.7	99.1	101		2.52
	Zinc	99.6	93.4	95.7	98.9		2.46
EPA 200.8 Rev. 5.4	Aluminum	101	101	100	101		0.505
	Antimony	99.6	102	100	101		1.50
	Arsenic	100	101	99.4	101		1.64
	Barium	102	102	101	102		1.02
	Beryllium	96.1	94.7	92.5	95.7		2.35
	Boron	103	105	107	106		1.49
	Cadmium	98.0	100	99.0	99.0		1.24
	Chromium	102	101	102	100		0.833
	Cobalt	96.2	94.1	93.1	92.9		1.04
	Copper	100	97.9	96.2	96.2		1.70
	Lead	94.3	95.7	94.6	95.9		1.12
	Manganese	101	101	99.5	99.3		1.71
	Molybdenum	97.7	101	99.3	100		1.30
	Nickel	100	97.2	96.8	98.1		0.455
	Selenium	98.4	95.9	93.3	96.2		2.72
	Silver	100	100	99.9	99.3		0.313
	Thallium	96.8	98.3	97.4	98.7		0.879
EPA 8270E	Aldrin	42.0	46.1	53.6			14.9
	Alpha-BHC	71.4	64.2	72.6			12.3
	Alpha-Chlordane	45.7	56.5	55.7			1.39
	Beta-BHC	76.6	58.7	54.3			7.66
	Beta-Cyfluthrin	126	190	205			7.75
	Bifenthrin	27.6	30.8	35.5			14.4
	Chlorothalonil	70.4	95.4	132			32.1
	Cis-Nonachlor	43.4	46.5	50.6			8.34
	Cypermethrin	45.8	44.0	58.3			28.0
	Dacthal	68.6	64.7	68.2			5.23
	DDD-p,p'	43.1	49.6	47.6			4.23
	DDE-p,p'	49.3	60.8	54.4			11.1
	DDT-p,p'	50.5	46.6	55.3			17.0
	Delta-BHC	64.7	64.4	61.6			4.54
	Deltamethrin	63.6	60.0	82.7			31.7
	Dichlobenil	54.0	52.7	43.6			18.9
	Dicofol	55.9	61.6	63.4			2.84
	Dieldrin	48.0	58.6	55.4			5.58
	Endosulfan I	56.9	62.4	63.3			1.46
	Endosulfan II	65.4	67.1	69.1			2.95
	Endosulfan Sulfate	65.6	68.2	71.9			5.30
	Endrin	43.0	55.9	51.1			8.90
	Endrin Aldehyde	37.8	40.4	39.0			3.64
	Endrin Ketone	160	261	215			19.0
	Esfenvalerate	52.6	50.6	65.3			25.5
	Ethalfuralin	36.6	40.0	36.1			10.2
	Fenpropathrin	47.1	42.6	56.3			27.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Gamma-BHC	58.1	62.1	54.0		14.0
	Gamma-Chlordane	39.0	55.5	51.8		6.90
	Heptachlor	45.0	51.6	57.3		10.4
	Heptachlor Epoxide	42.8	41.7	43.8		4.89
	Hexachlorobenzene	36.5	42.8	38.9		9.66
	Kepone	74.6	82.2	93.4		12.7
	Lambda-Cyhalothrin	32.7	34.5	44.2		24.8
	Methoprene	53.7	50.9	58.5		13.9
	Methoxychlor	55.8	50.4	61.9		20.5
	MGK-264	64.0	64.8	62.3		4.06
	Mirex	24.0	26.9	32.4		18.8
	Oxychlordane	127	201	172		15.4
	PCB-1016	63.5	69.8	63.5		9.47
	PCB-1260	76.2	92.8	74.3		22.2
	Permethrin	36.9	38.0	46.1		19.1
	Phenothrin	37.3	46.2	44.3		4.19
	Piperonyl Butoxide	57.5	45.2	54.6		17.3
	Prallethrin	51.8	56.5	49.4		13.5
	Tau-Fluvalinate	52.7	50.2	71.0		34.3
	Tetramethrin	58.8	51.0	58.4		13.4
	Trans-Nonachlor	43.8	61.4	54.9		11.2
	Triclosan Methyl	134	173	169		2.41
	Trifluralin	34.0	46.5	45.3		2.58
EPA 8276	Chlordane	56.7	66.2	65.4		1.15
	Toxaphene	62.1	76.0	79.6		4.65
EPA 8321B	2,4-D	75.1	102	96.6		5.06
	2,4,5-T	61.7	73.5	76.0		3.35
	Acesulfame K	130	132	132		0.406
	Acetaminophen	82.3	98.9	101		2.55
	Acetamiprid	61.5	47.7	45.6		4.33
	AMPA	90.5	88.0	89.8		2.03
	Bentazon	56.7	34.2	33.1		3.36
	Benzovindiflupyr	76.9	78.8	78.3		0.572
	Carbamazepine	63.3	55.7	56.1		0.752
	Clothianidin	80.2	82.2	83.3		1.26
	Dinotefuran	66.1	62.1	63.3		2.02
	Diuron	62.2	56.5	55.7		1.33
	Endothall	104	97.2	109		11.3
	Fenuron	78.6	56.6	57.9		2.23
	Fluridone	77.4	69.7	73.0		4.66
	Glufosinate	97.4	94.7	94.7		0.0182
	Glyphosate	97.3	97.1	90.9		6.52
	Hydrocodone	96.1	81.7	81.4		0.414
	Ibuprofen	51.3	61.1	59.4		2.76
	Imazapyr	75.3	92.7	94.4		1.83
	Imidacloprid	76.7	101	105		3.00
	Linuron	60.7	58.5	59.5		1.68
	Mandestrobin	79.3	81.7	83.8		2.57
	MCPP	66.7	80.4	84.3		4.67
	Naproxen	45.3	59.4	71.2		18.0
	Primidone	75.0	77.7	80.4		3.48
	Pyraclostrobin	83.9	85.6	82.5		3.67
	Silvex	70.0	71.0	79.8		11.7
	Sucralose	120	125	121		3.23

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Thiamethoxam	78.2	83.0	85.4		2.85
	Tolfenpyrad	45.5	49.2	47.4		3.72
	Triclopyr	67.4	77.6	85.3		9.41

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	2452162
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2452162
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2452152
EPA 8270E	PCBs in water matrices by GC/MS/MS	2452152
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2452152
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2452161
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2452162

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	11/17/2023	11/20/2023 12:20	George D Taylor	11/21/2023 17:22	Samatha Luckman	2452162
	11/17/2023	11/20/2023 12:20	George D Taylor	11/21/2023 17:30	Samatha Luckman	2452162
EPA 200.8 Rev. 5.4	11/17/2023	11/20/2023 12:20	George D Taylor	11/21/2023 19:30	Conrad Hartmann	2452162
	11/17/2023	11/20/2023 12:20	George D Taylor	11/27/2023 16:29	Conrad Hartmann	2452162
	11/17/2023	11/20/2023 12:20	George D Taylor	11/28/2023 21:10	Conrad Hartmann	2452162
	11/17/2023	11/21/2023 09:00	Julie Wi	12/01/2023 21:16	Lipi Saha	2452152
EPA 8270E	11/17/2023	11/21/2023 09:00	Julie Wi	12/04/2023 19:27	Julie Wi	2452152
EPA 8276	11/17/2023	11/21/2023 09:00	Julie Wi	12/10/2023 14:29	Arthur Maknenko	2452152
EPA 8321B	11/17/2023	11/17/2023 11:00	Tae K Lee	11/17/2023 13:11	Hana Lee	2452161
	11/17/2023	11/17/2023 11:00	Tae K Lee	11/17/2023 14:06	Hana Lee	2452161
	11/17/2023	11/17/2023 11:00	Tae K Lee	11/17/2023 16:02	Hana Lee	2452161
	11/17/2023	11/21/2023 13:00	Hoor Shaik	11/29/2023 02:51	Juyoung Kim	2452161
SM 2340 B-2011	11/17/2023			11/21/2023 17:22	Samatha Luckman	2452162