

Chemical Analysis Report

CEN-DIST-2022-06-16-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Soldier Creek**
Request ID: **RQ-2022-06-13-53**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 05-JUL-2022 10:10



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 group are included in this report: 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: Soldier Creek @ 150m Upstream of SR Hwy 419 Collection Date/Time: 06/15/2022 10:35

Field ID: G2CE0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335127	EPA 8270E	Aldrin	0.69	U	ng/L	P415349	
		Alpha-BHC	0.11	U	ng/L	P415349	
		Alpha-Chlordane	0.21	U	ng/L	P415349	
		Beta-BHC	0.11	U	ng/L	P415349	
		Beta-Cyfluthrin**	1.3	U	ng/L	P415349	
		Bifenthrin**	0.53	U	ng/L	P415349	
		Chlorothalonil	1.3	I	ng/L	P415349	
		Cis-Nonachlor**	0.21	U	ng/L	P415349	
		Cypermethrin	1.6	U	ng/L	P415349	
		Dacthal**	0.16	U	ng/L	P415349	
		DDD-p,p'	0.27	U	ng/L	P415349	
		DDE-p,p'	0.21	U	ng/L	P415349	
		DDT-p,p'	0.27	U	ng/L	P415349	
		Delta-BHC	0.43	U	ng/L	P415349	
		Deltamethrin**	1.3	U	ng/L	P415349	
		Dichlobenil**	0.27	U	ng/L	P415349	
		Dicofol	1.3	U	ng/L	P415349	
		Dieldrin	0.43	U	ng/L	P415349	
		Endosulfan I	0.43	U	ng/L	P415349	
		Endosulfan II	0.43	U	ng/L	P415349	
		Endosulfan Sulfate	0.32	U	ng/L	P415349	
		Endrin	0.43	U	ng/L	P415349	
		Endrin Aldehyde	0.80	U	ng/L	P415349	
		Endrin Ketone	0.43	U	ng/L	P415349	
		Esfenvalerate**	0.80	U	ng/L	P415349	
		Ethalfuralin**	0.16	U	ng/L	P415349	
		Fenpropathrin**	0.27	U	ng/L	P415349	
		Gamma-BHC	0.13	U	ng/L	P415349	
		Gamma-Chlordane	0.21	U	ng/L	P415349	
		Heptachlor	0.21	U	ng/L	P415349	
		Heptachlor Epoxide	0.27	U	ng/L	P415349	
		Hexachlorobenzene**	1.1	U	ng/L	P415349	
		Kepone**	5.3	U	ng/L	P415349	
		Lambda-Cyhalothrin**	0.80	U	ng/L	P415349	
		Methoprene**	0.80	U	ng/L	P415349	
		Methoxychlor	0.32	U	ng/L	P415349	
		MGK-264**	0.21	U	ng/L	P415349	
		Mirex	0.74	U	ng/L	P415349	
		Oxychlordane**	0.32	U	ng/L	P415349	
		Permethrin	1.7	U	ng/L	P415349	
		Phenothrin**	0.96	U	ng/L	P415349	
		Piperonyl Butoxide**	0.22	I	ng/L	P415349	
		Prallethrin**	2.1	U	ng/L	P415349	
		Tau-Fluvalinate**	0.27	U	ng/L	P415349	

Field ID: G2CE0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335127	EPA 8270E	Tetramethrin**	0.80	U	ng/L	P415349	MS
		Trans-Nonachlor**	0.21	U	ng/L	P415349	
		Triclosan Methyl**	0.16	U	ng/L	P415349	
		Trifluralin	0.21	U	ng/L	P415349	
	EPA 8276	Chlordane	2.7	U	ng/L	P415349	
		Toxaphene	16	U	ng/L	P415349	
2335128	EPA 8321B	2,4-D	0.0047	I	ug/L	P415325	
		Acesulfame K	0.23	I	ug/L	P415240	
		2,4,5-T	0.0040	U	ug/L	P415325	
		AMPA	0.11	I	ug/L	P415240	
		Acetaminophen	0.0080	U	ug/L	P415325	
		Acetamiprid	0.0020	U	ug/L	P415325	
		Endothall	0.25	U	ug/L	P415240	
		Glufosinate	0.10	U	ug/L	P415240	
		Glyphosate	0.27	I	ug/L	P415240	
		Afidopyropen	0.0020	U	ug/L	P415325	
		Bentazon	0.054		ug/L	P415325	
		Sucralose	4.4		ug/L	P415240	
		Benzovindiflupyr	0.0020	U	ug/L	P415325	
		Carbamazepine	0.016		ug/L	P415325	
		Clothianidin	0.0087		ug/L	P415325	
		Dinotefuran	0.0053	I	ug/L	P415325	
		Diuron	0.0020	U	ug/L	P415325	
		Fenuron	0.032	U	ug/L	P415325	
		Fluridone	0.010		ug/L	P415325	
		Imazapyr	0.14		ug/L	P415325	
		Hydrocodone	0.0020	U	ug/L	P415325	
		Ibuprofen	0.080	U	ug/L	P415325	
		Imidacloprid	0.0078	I	ug/L	P415325	
		Linuron	0.0040	U	ug/L	P415325	
		Mandestrobin	0.0020	U	ug/L	P415325	
		MCPP	0.0040	U	ug/L	P415325	
		Naproxen	0.0080	U	ug/L	P415325	
		Primidone	0.022		ug/L	P415325	
		Pyraclostrobin	0.0020	U	ug/L	P415325	
		Silvex	0.0040	U	ug/L	P415325	
		Thiamethoxam	0.0020	U	ug/L	P415325	
		Tolfenpyrad	0.0020	U	ug/L	P415325	
		Triclopyr	0.0040	U	ug/L	P415325	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P415349

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	1.2	U	ng/L
Chlorothalonil	1.2	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'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P415349

Component	Result	Code	Units
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
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	0.70	U	ng/L
Mirex	0.70	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P415349

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Chlordane	2.5	U	ng/L
Toxaphene	15	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276
Batch ID: P415349

Component	Result	Code	Units
Toxaphene	15	U	ng/L

Reference Method: EPA 8321B
Batch ID: P415240

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: P415325

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	0.0040	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 8270E
 Batch ID: P415349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	57.5		P	10 - 93.0
Alpha-BHC	94.4		P	75 - 106
Alpha-Chlordane	76.3		P	50 - 109
Beta-BHC	119		P	36 - 138
Beta-Cyfluthrin	91.0		P	23 - 167
Bifenthrin	63.5		P	11 - 123
Chlorothalonil	116		P	27 - 190
Cis-Nonachlor	67.7		P	40 - 111
Cypermethrin	86.5		P	25 - 155
Dacthal	98.2		P	72 - 119
DDD-p,p'	73.6		P	47 - 108
DDE-p,p'	83.7		P	48 - 107
DDT-p,p'	70.8		P	49 - 111
Delta-BHC	138		P	54 - 138
Deltamethrin	98.0		P	22 - 189
Dichlobenil	108		P	32 - 113
Dicofol	74.0		P	50 - 108
Dieldrin	84.7		P	56 - 110
Endosulfan I	88.4		P	60 - 105
Endosulfan II	90.9		P	50 - 120
Endosulfan Sulfate	95.5		P	55 - 121
Endrin	70.5		P	31 - 119
Endrin Aldehyde	79.3		P	36 - 116
Endrin Ketone	91.7		P	69 - 177
Esfenvalerate	89.7		P	10 - 179
Ethalfuralin	77.5		P	49 - 99.0
Fenpropathrin	79.4		P	35 - 119
Gamma-BHC	107		P	69 - 120
Gamma-Chlordane	82.9		P	45 - 107
Heptachlor	67.7		P	41 - 100
Heptachlor Epoxide	88.9		P	58 - 106
Hexachlorobenzene	79.7		P	39 - 100
Kepone	93.3		P	10 - 191
Lambda-Cyhalothrin	81.7		P	21 - 206
Methoprene	74.0		P	10 - 129
Methoxychlor	85.1		P	61 - 111
MGK-264	101		P	20 - 123
Mirex	53.3		P	10 - 182
Oxychlordane	83.7		P	39 - 110
Permethrin	86.8		P	26 - 152
Phenothrin	70.3		P	10 - 109
Piperonyl Butoxide	104		P	19 - 147
Prallethrin	88.9		P	14 - 109
Tau-Fluvalinate	82.1		P	16 - 134
Tetramethrin	117		P	10 - 125
Trans-Nonachlor	74.6		P	45 - 107
Triclosan Methyl	84.5		P	60 - 110
Trifluralin	77.7		P	44 - 101

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P415349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	94.4		P	61 - 118
Toxaphene	103		P	51 - 122

Reference Method: EPA 8321B
Batch ID: P415240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	114		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	115		P	40 - 150
Sucralose	98.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.9		P	40 - 150
2,4,5-T	47.0		P	40 - 150
Acetaminophen	79.8		P	30 - 150
Acetamiprid	92.7		P	40 - 150
Afidopyropen	70.5		P	30 - 150
Bentazon	73.6		P	30 - 150
Benzovindiflupyr	85.1		P	40 - 150
Carbamazepine	90.6		P	40 - 150
Clothianidin	95.3		P	40 - 150
Dinotefuran	91.8		P	40 - 150
Diuron	92.1		P	40 - 150
Fenuron	87.9		P	40 - 150
Fluridone	81.0		P	40 - 150
Hydrocodone	89.4		P	40 - 150
Ibuprofen	61.2		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	92.6		P	40 - 150
Linuron	85.9		P	40 - 150
Mandestrobin	83.0		P	40 - 150
MCPP	77.3		P	40 - 150
Naproxen	69.4		P	40 - 150
Primidone	93.0		P	40 - 150
Pyraclostrobin	75.8		P	40 - 150
Silvex	55.4		P	40 - 150
Thiamethoxam	85.7		P	40 - 150
Tolfenpyrad	46.7		P	30 - 150
Triclopyr	52.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P415349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335161	Aldrin	63.9	61.9	P/P	10 - 89.0
2335161	Alpha-BHC	102	104	P/P	71 - 105
2335161	Alpha-Chlordane	89.6	96.8	P/P	43 - 107
2335161	Beta-BHC	129	135	P/P	57 - 152
2335161	Beta-Cyfluthrin	115	112	P/P	29 - 186
2335161	Bifenthrin	84.4	81.4	P/P	19 - 119
2335161	Chlorothalonil	170	190	P/P	10 - 245
2335161	Cis-Nonachlor	81.2	82.9	P/P	36 - 110
2335161	Cypermethrin	103	101	P/P	24 - 169
2335161	Dacthal	101	108	P/P	62 - 115
2335161	DDD-p,p'	72.5	75.2	P/P	36 - 109
2335161	DDE-p,p'	86.6	94.3	P/P	30 - 114
2335161	DDT-p,p'	76.5	74.2	P/P	42 - 108
2335161	Delta-BHC	151	161	P/P	60 - 164
2335161	Deltamethrin	122	129	P/P	10 - 210
2335161	Dichlobenil	89.2	101	P/P	23 - 108
2335161	Dicofol	74.2	69.3	P/P	44 - 109
2335161	Dieldrin	86.8	92.0	P/P	37 - 119
2335161	Endosulfan I	93.5	104	P/P	52 - 105
2335161	Endosulfan II	91.6	90.2	P/P	35 - 127
2335161	Endosulfan Sulfate	101	98.6	P/P	39 - 130
2335161	Endrin	73.9	70.4	P/P	30 - 116
2335161	Endrin Aldehyde	84.1	74.8	P/P	20 - 110
2335161	Endrin Ketone	97.5	98.2	P/P	48 - 134
2335161	Esfenvalerate	111	115	P/P	10 - 199
2335161	Ethalfuralin	86.4	80.6	P/P	48 - 95.0
2335161	Fenpropathrin	89.1	85.9	P/P	37 - 121
2335161	Gamma-BHC	110	119	P/P	61 - 126
2335161	Gamma-Chlordane	74.3	85.3	P/P	39 - 105
2335161	Heptachlor	66.6	63.5	P/P	38 - 96.0
2335161	Heptachlor Epoxide	98.8	96.9	P/P	42 - 114
2335161	Hexachlorobenzene	75.4	77.1	P/P	39 - 93.0
2335161	Kepone	101	107	P/P	10 - 215
2335161	Lambda-Cyhalothrin	98.0	102	P/P	10 - 204
2335161	Methoprene	74.7	85.2	P/P	17 - 108
2335161	Methoxychlor	88.9	84.1	P/P	56 - 115
2335161	MGK-264	94.2	110	P/P	35 - 120
2335161	Mirex	64.2	62.5	P/P	10 - 178
2335161	Oxychlordane	88.4	88.1	P/P	47 - 91.0
2335161	Permethrin	106	94.8	P/P	27 - 170
2335161	Phenothrin	92.0	90.8	P/P	10 - 133
2335161	Piperonyl Butoxide	108	116	P/P	23 - 150
2335161	Prallethrin	83.9	102	P/P	21 - 113
2335161	Tau-Fluvalinate	107	106	P/P	16 - 158
2335161	Tetramethrin	132	149	P/F	22 - 132
2335161	Trans-Nonachlor	77.7	87.1	P/P	43 - 102
2335161	Triclosan Methyl	87.9	96.8	P/P	49 - 109
2335161	Trifluralin	78.8	76.4	P/P	48 - 93.0

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P415349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335436	Chlordane	105	112	P/P	55 - 128
2335436	Toxaphene	85.6	88.3	P/P	57 - 211

Reference Method: EPA 8321B
Batch ID: P415240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334644	Acesulfame K	73.2	72.6	P/P	40 - 150
2334644	AMPA	80.2	81.8	P/P	40 - 150
2334644	Endothall	101	101	P/P	40 - 150
2334644	Glufosinate	83.6	87.0	P/P	40 - 150
2334644	Glyphosate	93.5	97.0	P/P	40 - 150
2334644	Sucralose	100	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334980	2,4-D	85.8	84.3	P/P	40 - 150
2334980	2,4,5-T	41.5	45.4	P/P	40 - 150
2334980	Acetaminophen	94.0	96.8	P/P	30 - 150
2334980	Acetamiprid	83.6	81.2	P/P	40 - 150
2334980	Afidopyropen	64.9	72.3	P/P	30 - 150
2334980	Bentazon	60.1	60.3	P/P	30 - 150
2334980	Benzovindiflupyr	82.1	77.7	P/P	40 - 150
2334980	Carbamazepine	86.4	91.9	P/P	40 - 150
2334980	Clothianidin	82.3	98.8	P/P	40 - 150
2334980	Dinotefuran	101	109	P/P	40 - 150
2334980	Diuron	77.2	76.5	P/P	40 - 150
2334980	Fenuron	84.0	87.8	P/P	40 - 150
2334980	Fluridone	76.7	80.2	P/P	40 - 150
2334980	Hydrocodone	85.0	87.4	P/P	40 - 150
2334980	Ibuprofen	64.6	71.6	P/P	40 - 150
2334980	Imazapyr	84.3	82.3	P/P	40 - 150
2334980	Imidacloprid	110	125	P/P	40 - 150
2334980	Linuron	80.6	83.0	P/P	40 - 150
2334980	Mandestrobin	75.8	82.0	P/P	40 - 150
2334980	MCPP	67.5	67.5	P/P	40 - 150
2334980	Naproxen	67.9	87.3	P/P	40 - 150
2334980	Primidone	77.3	104	P/P	40 - 150
2334980	Pyraclostrobin	76.0	78.5	P/P	40 - 150
2334980	Silvex	60.5	60.9	P/P	40 - 150
2334980	Thiamethoxam	95.4	96.2	P/P	40 - 150
2334980	Tolfenpyrad	45.9	47.1	P/P	30 - 150
2334980	Triclopyr	45.5	48.2	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P415349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335161	Aldrin	3.21	Spike	P	0 - 37
2335161	Alpha-BHC	2.18	Spike	P	0 - 16
2335161	Alpha-Chlordane	4.22	Spike	P	0 - 28
2335161	Beta-BHC	5.01	Spike	P	0 - 32
2335161	Beta-Cyfluthrin	2.81	Spike	P	0 - 41
2335161	Bifenthrin	3.68	Spike	P	0 - 36
2335161	Chlorothalonil	11.5	Spike	P	0 - 54
2335161	Cis-Nonachlor	2.03	Spike	P	0 - 33
2335161	Cypermethrin	1.25	Spike	P	0 - 38
2335161	Dacthal	7.23	Spike	P	0 - 23
2335161	DDD-p,p'	3.62	Spike	P	0 - 35
2335161	DDE-p,p'	8.50	Spike	P	0 - 27
2335161	DDT-p,p'	3.15	Spike	P	0 - 31
2335161	Delta-BHC	5.88	Spike	P	0 - 30
2335161	Deltamethrin	5.65	Spike	P	0 - 76
2335161	Dichlobenil	11.9	Spike	P	0 - 33
2335161	Dicofol	6.74	Spike	P	0 - 24
2335161	Dieldrin	5.87	Spike	P	0 - 35
2335161	Endosulfan I	10.6	Spike	P	0 - 25
2335161	Endosulfan II	1.47	Spike	P	0 - 31
2335161	Endosulfan Sulfate	2.33	Spike	P	0 - 38
2335161	Endrin	4.87	Spike	P	0 - 53
2335161	Endrin Aldehyde	11.7	Spike	P	0 - 81
2335161	Endrin Ketone	0.750	Spike	P	0 - 33
2335161	Esfenvalerate	3.70	Spike	P	0 - 46
2335161	Ethalfuralin	6.85	Spike	P	0 - 22
2335161	Fenpropathrin	3.75	Spike	P	0 - 29
2335161	Gamma-BHC	7.63	Spike	P	0 - 17
2335161	Gamma-Chlordane	7.93	Spike	P	0 - 28
2335161	Heptachlor	4.79	Spike	P	0 - 28
2335161	Heptachlor Epoxide	1.94	Spike	P	0 - 23
2335161	Hexachlorobenzene	2.29	Spike	P	0 - 22
2335161	Kepone	5.46	Spike	P	0 - 61
2335161	Lambda-Cyhalothrin	3.89	Spike	P	0 - 52
2335161	Methoprene	13.2	Spike	P	0 - 38
2335161	Methoxychlor	5.53	Spike	P	0 - 29
2335161	MGK-264	15.1	Spike	P	0 - 41
2335161	Mirex	2.65	Spike	P	0 - 39
2335161	Oxychlordane	0.271	Spike	P	0 - 33
2335161	Permethrin	11.4	Spike	P	0 - 39
2335161	Phenothrin	1.33	Spike	P	0 - 52
2335161	Piperonyl Butoxide	6.83	Spike	P	0 - 91
2335161	Prallethrin	19.4	Spike	P	0 - 34
2335161	Tau-Fluvalinate	0.356	Spike	P	0 - 41
2335161	Tetramethrin	11.9	Spike	P	0 - 43
2335161	Trans-Nonachlor	6.00	Spike	P	0 - 31
2335161	Triclosan Methyl	9.64	Spike	P	0 - 24
2335161	Trifluralin	3.07	Spike	P	0 - 23

Quality Assurance Report Precision

Reference Method: EPA 8276

Batch ID: P415349

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335436	Chlordane	5.96	Spike	P	0 - 25
2335436	Toxaphene	3.11	Spike	P	0 - 24

Reference Method: EPA 8321B

Batch ID: P415240

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334644	Acesulfame K	0.874	Spike	P	0 - 30
2334644	AMPA	2.05	Spike	P	0 - 30
2334644	Endothall	0.546	Spike	P	0 - 30
2334644	Glufosinate	3.99	Spike	P	0 - 30
2334644	Glyphosate	3.69	Spike	P	0 - 30
2334644	Sucralose	3.15	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P415325

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334980	2,4-D	1.79	Spike	P	0 - 30
2334980	2,4,5-T	8.96	Spike	P	0 - 30
2334980	Acetaminophen	2.89	Spike	P	0 - 30
2334980	Acetamiprid	2.93	Spike	P	0 - 30
2334980	Afidopyropen	10.8	Spike	P	0 - 30
2334980	Bentazon	0.430	Spike	P	0 - 30
2334980	Benzovindiflupyr	5.48	Spike	P	0 - 30
2334980	Carbamazepine	4.98	Spike	P	0 - 30
2334980	Clothianidin	18.2	Spike	P	0 - 30
2334980	Dinotefuran	7.60	Spike	P	0 - 30
2334980	Diuron	0.987	Spike	P	0 - 30
2334980	Fenuron	4.43	Spike	P	0 - 30
2334980	Fluridone	4.51	Spike	P	0 - 30
2334980	Hydrocodone	2.89	Spike	P	0 - 30
2334980	Ibuprofen	10.3	Spike	P	0 - 30
2334980	Imazapyr	2.45	Spike	P	0 - 30
2334980	Imidacloprid	10.7	Spike	P	0 - 30
2334980	Linuron	2.99	Spike	P	0 - 30
2334980	Mandestrobin	7.77	Spike	P	0 - 30
2334980	MCPP	0.125	Spike	P	0 - 30
2334980	Naproxen	25.0	Spike	P	0 - 30
2334980	Primidone	29.1	Spike	P	0 - 30
2334980	Pyraclostrobin	3.24	Spike	P	0 - 30
2334980	Silvex	0.733	Spike	P	0 - 30
2334980	Thiamethoxam	0.838	Spike	P	0 - 30
2334980	Tolfenpyrad	2.65	Spike	P	0 - 30
2334980	Triclopyr	5.77	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2335127
Field Sample ID: G2CE0071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	93.1	P	31 - 118
EPA 8270E	Tetrachloro-m-xylene	68.3	P	28 - 96.0
EPA 8276	Decachlorobiphenyl	80.5	P	30 - 97.0
EPA 8276	PCNB	95.2	P	45 - 119

Lab Sample ID: 2335128
Field Sample ID: G2CE0071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	92.8	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.3	P	30 - 160
EPA 8321B	Primidone-d5	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A112919
Included Lab Sample IDs: 2335128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	126	127	P/P	60 - 160
Sucralose	104	102	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112921
Included Lab Sample IDs: 2335128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	114	P/P	60 - 160
Endothall	99.5	107	P/P	60 - 160
Glufosinate	112	110	P/P	60 - 160
Glyphosate	112	113	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112975
Included Lab Sample IDs: 2335128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.3	99.8	P/P	50 - 150
2,4,5-T	112	99.7	P/P	50 - 150
Acetaminophen	104	105	P/P	60 - 160
Acetamiprid	99.2	103	P/P	50 - 150
Afidopyropen	97.4	107	P/P	50 - 150
Bentazon	105	87.7	P/P	50 - 160
Benzovindiflupyr	104	99.4	P/P	50 - 150
Carbamazepine	103	103	P/P	60 - 150
Clothianidin	112	104	P/P	60 - 150
Dinotefuran	99.9	107	P/P	50 - 150
Diuron	81.0	104	P/P	60 - 160
Fenuron	95.2	95.7	P/P	60 - 150
Fluridone	106	102	P/P	60 - 160
Hydrocodone	95.9	108	P/P	60 - 150
Ibuprofen	93.5	82.8	P/P	50 - 160
Imazapyr	93.5	91.2	P/P	50 - 150
Imidacloprid	104	100	P/P	60 - 150
Linuron	103	108	P/P	60 - 150
Mandestrobin	98.4	102	P/P	50 - 150
MCPP	101	103	P/P	50 - 150
Naproxen	147	113	P/P	50 - 160
Primidone	102	120	P/P	60 - 150
Pyraclostrobin	99.9	102	P/P	60 - 150
Silvex	104	94.7	P/P	50 - 150
Thiamethoxam	101	101	P/P	50 - 150
Tolfenpyrad	90.8	98.9	P/P	60 - 150
Triclopyr	107	98.5	P/P	50 - 150

Reference Method: EPA 8270E
Run ID: A113080
Included Lab Sample IDs: 2335127

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

Reference Method: EPA 8270E
 Run ID: A113080
 Included Lab Sample IDs: 2335127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	102		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	106		P	80 - 120
Beta-BHC	102		P	80 - 120
Beta-Cyfluthrin	102		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	103		P	80 - 120
Cis-Nonachlor	94.2		P	80 - 120
Cypermethrin	94.6		P	80 - 120
Dacthal	106		P	80 - 120
DDD-p,p'	99.6		P	80 - 120
DDE-p,p'	109		P	80 - 120
DDT-p,p'	99.1		P	80 - 120
Delta-BHC	98.9		P	80 - 120
Deltamethrin	99.7		P	80 - 120
Dichlobenil	97.2		P	80 - 120
Dicofol	102		P	80 - 120
Dieldrin	103		P	80 - 120
Endosulfan I	106		P	80 - 120
Endosulfan II	103		P	80 - 120
Endosulfan Sulfate	101		P	80 - 120
Endrin	99.5		P	80 - 120
Endrin Aldehyde	101		P	80 - 120
Endrin Ketone	100		P	80 - 120
Esfenvalerate	101		P	80 - 120
Ethalfuralin	98.2		P	80 - 120
Fenpropathrin	93.9		P	80 - 120
Gamma-BHC	99.1		P	80 - 120
Gamma-Chlordane	106		P	80 - 120
Heptachlor	101		P	80 - 120
Heptachlor Epoxide	102		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	80.0		P	80 - 120
Lambda-Cyhalothrin	102		P	80 - 120
Methoprene	103		P	80 - 120
Methoxychlor	96.8		P	80 - 120
MGK-264	101		P	80 - 120
Mirex	101		P	80 - 120
Oxychlordane	105		P	80 - 120
Permethrin	105		P	80 - 120
Phenothrin	96.8		P	80 - 120
Piperonyl Butoxide	91.1		P	80 - 120
Prallethrin	103		P	80 - 120
Tau-Fluvalinate	103		P	80 - 120
Tetramethrin	104		P	80 - 120
Trans-Nonachlor	106		P	80 - 120
Triclosan Methyl	105		P	80 - 120
Trifluralin	97.3		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A113185

Included Lab Sample IDs: 2335127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	105		P	80 - 120
Toxaphene	102		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 8270E	Aldrin	57.5	63.9	61.9		3.21
	Alpha-BHC	94.4	102	104		2.18
	Alpha-Chlordane	76.3	89.6	96.8		4.22
	Beta-BHC	119	129	135		5.01
	Beta-Cyfluthrin	91.0	115	112		2.81
	Bifenthrin	63.5	84.4	81.4		3.68
	Chlorothalonil	116	170	190		11.5
	Cis-Nonachlor	67.7	81.2	82.9		2.03
	Cypermethrin	86.5	103	101		1.25
	Dacthal	98.2	101	108		7.23
	DDD-p,p'	73.6	72.5	75.2		3.62
	DDE-p,p'	83.7	86.6	94.3		8.50
	DDT-p,p'	70.8	76.5	74.2		3.15
	Delta-BHC	138	151	161		5.88
	Deltamethrin	98.0	122	129		5.65
	Dichlobenil	108	89.2	101		11.9
	Dicofol	74.0	74.2	69.3		6.74
	Dieldrin	84.7	86.8	92.0		5.87
	Endosulfan I	88.4	93.5	104		10.6
	Endosulfan II	90.9	91.6	90.2		1.47
	Endosulfan Sulfate	95.5	101	98.6		2.33
	Endrin	70.5	73.9	70.4		4.87
	Endrin Aldehyde	79.3	84.1	74.8		11.7
	Endrin Ketone	91.7	97.5	98.2		0.750
	Esfenvalerate	89.7	111	115		3.70
	Ethalfuralin	77.5	86.4	80.6		6.85
	Fenpropathrin	79.4	89.1	85.9		3.75
	Gamma-BHC	107	110	119		7.63
	Gamma-Chlordane	82.9	74.3	85.3		7.93
	Heptachlor	67.7	66.6	63.5		4.79
	Heptachlor Epoxide	88.9	98.8	96.9		1.94
	Hexachlorobenzene	79.7	75.4	77.1		2.29
	Kepone	93.3	101	107		5.46
	Lambda-Cyhalothrin	81.7	98.0	102		3.89
	Methoprene	74.0	74.7	85.2		13.2
	Methoxychlor	85.1	88.9	84.1		5.53
	MGK-264	101	94.2	110		15.1
	Mirex	53.3	64.2	62.5		2.65
	Oxychlordane	83.7	88.4	88.1		0.271
	Permethrin	86.8	106	94.8		11.4
	Phenothrin	70.3	92.0	90.8		1.33
	Piperonyl Butoxide	104	108	116		6.83
	Prallethrin	88.9	83.9	102		19.4
	Tau-Fluvalinate	82.1	107	106		0.356
	Tetramethrin	117	132	149		11.9
	Trans-Nonachlor	74.6	77.7	87.1		6.00
	Triclosan Methyl	84.5	87.9	96.8		9.64
	Trifluralin	77.7	78.8	76.4		3.07
EPA 8276	Chlordane	94.4	105	112		5.96
	Toxaphene	103	85.6	88.3		3.11
EPA 8321B	2,4-D	86.9	85.8	84.3		1.79
	2,4,5-T	47.0	41.5	45.4		8.96
	Acesulfame K	104	73.2	72.6		0.874
	Acetaminophen	79.8	94.0	96.8		2.89

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Acetamiprid	92.7	83.6	81.2		2.93
	Afidopyropen	70.5	64.9	72.3		10.8
	AMPA	114	80.2	81.8		2.05
	Bentazon	73.6	60.1	60.3		0.430
	Benzovindiflupyr	85.1	82.1	77.7		5.48
	Carbamazepine	90.6	86.4	91.9		4.98
	Clothianidin	95.3	82.3	98.8		18.2
	Dinotefuran	91.8	101	109		7.60
	Diuron	92.1	77.2	76.5		0.987
	Endothall	102	101	101		0.546
	Fenuron	87.9	84.0	87.8		4.43
	Fluridone	81.0	76.7	80.2		4.51
	Glufosinate	110	83.6	87.0		3.99
	Glyphosate	115	93.5	97.0		3.69
	Hydrocodone	89.4	85.0	87.4		2.89
	Ibuprofen	61.2	64.6	71.6		10.3
	Imazapyr	86.4	84.3	82.3		2.45
	Imidacloprid	92.6	110	125		10.7
	Linuron	85.9	80.6	83.0		2.99
	Mandestrobin	83.0	75.8	82.0		7.77
	MCCP	77.3	67.5	67.5		0.125
	Naproxen	69.4	67.9	87.3		25.0
	Primidone	93.0	77.3	104		29.1
	Pyraclostrobin	75.8	76.0	78.5		3.24
	Silvex	55.4	60.5	60.9		0.733
	Sucralose	98.3	100	103		3.15
	Thiamethoxam	85.7	95.4	96.2		0.838
	Tolfenpyrad	46.7	45.9	47.1		2.65
	Triclopyr	52.7	45.5	48.2		5.77

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2335127
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2335127
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2335128

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8270E	06/16/2022	06/21/2022 07:30	Fe-Val Siddell	06/24/2022 21:52	Michael Poppell	2335127
EPA 8276	06/16/2022	06/21/2022 07:30	Fe-Val Siddell	06/28/2022 10:56	Julie Wi	2335127
EPA 8321B	06/16/2022	06/17/2022 09:00	Umesh Chiluwal	06/17/2022 15:31	Umesh Chiluwal	2335128
	06/16/2022	06/17/2022 09:00	Umesh Chiluwal	06/18/2022 02:28	Umesh Chiluwal	2335128
	06/16/2022	06/21/2022 09:00	June Rhew	06/22/2022 02:24	Juyoung Kim	2335128