

Chemical Analysis Report

NE-DIST-2022-04-28-02

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

Event Description: **Suwannee Central 2022**
Request ID: **RQ-2022-03-14-16**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-MAY-2022 15:39

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

Results for the following analytical 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: OLUSTEE CREEK AT SR-18

Collection Date/Time: 04/27/2022 10:50

Field ID: 21030071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2323013	EPA 8270E	Aldrin	0.67	U	ng/L	P412949	
		Alpha-BHC	0.10	U	ng/L	P412949	
		Alpha-Chlordane	0.21	U	ng/L	P412949	
		PCB-1016	2.1	U	ng/L	P412949	
		Beta-BHC	0.10	U	ng/L	P412949	
		PCB-1221	2.1	U	ng/L	P412949	
		Beta-Cyfluthrin**	1.3	U	ng/L	P412949	
		PCB-1232	2.1	U	ng/L	P412949	
		Bifenthrin**	0.51	U	ng/L	P412949	
		PCB-1242	2.1	U	ng/L	P412949	
		Carbophenothion	0.93	U	ng/L	P412949	
		PCB-1248	2.1	U	ng/L	P412949	
		Chlorothalonil	1.3	U	ng/L	P412949	
		PCB-1254	2.1	U	ng/L	P412949	
		Cis-Nonachlor**	0.21	U	ng/L	P412949	
		PCB-1260	2.1	U	ng/L	P412949	
		Cypermethrin	1.5	U	ng/L	P412949	
		Dacthal**	0.15	U	ng/L	P412949	
		DDD-p,p'	0.26	U	ng/L	P412949	
		DDE-p,p'	0.21	U	ng/L	P412949	
		DDT-p,p'	0.26	U	ng/L	P412949	
		Delta-BHC	0.41	U	ng/L	P412949	
		Deltamethrin**	1.3	U	ng/L	P412949	
		Dichlobenil**	0.26	U	ng/L	P412949	
		Dicofol	1.3	U	ng/L	P412949	
		Dieldrin	0.41	U	ng/L	P412949	
		Endosulfan I	0.41	U	ng/L	P412949	
		Endosulfan II	0.41	U	ng/L	P412949	
		Endosulfan Sulfate	0.31	U	ng/L	P412949	
		Endrin	0.41	U	ng/L	P412949	
		Endrin Aldehyde	0.77	U	ng/L	P412949	
		Endrin Ketone	0.41	U	ng/L	P412949	
		Esfenvalerate**	0.77	U	ng/L	P412949	
		Ethalfuralin**	0.15	U	ng/L	P412949	
		Fenpropathrin**	0.26	U	ng/L	P412949	
		Gamma-BHC	0.13	U	ng/L	P412949	
		Gamma-Chlordane	0.21	U	ng/L	P412949	
		Heptachlor	0.21	U	ng/L	P412949	
		Heptachlor Epoxide	0.26	U	ng/L	P412949	
		Hexachlorobenzene**	1.0	U	ng/L	P412949	
		Kepone**	5.1	U	ng/L	P412949	
		Lambda-Cyhalothrin**	0.77	U	ng/L	P412949	
		Methoprene**	0.77	U	ng/L	P412949	
		Methoxychlor	0.31	U	ng/L	P412949	

Field ID: 21030071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2323013	EPA 8270E	MGK-264**	0.21	U	ng/L	P412949	
		Mirex	0.72	U	ng/L	P412949	
		Oxychlordane**	0.31	U	ng/L	P412949	
		Permethrin	1.6	U	ng/L	P412949	
		Phenothrin**	0.93	U	ng/L	P412949	
		Piperonyl Butoxide**	0.27	I	ng/L	P412949	
		Prallethrin**	2.1	U	ng/L	P412949	
		Tau-Fluvalinate**	0.26	U	ng/L	P412949	
		Tetramethrin**	0.77	U	ng/L	P412949	
		Trans-Nonachlor**	0.21	U	ng/L	P412949	
		Triclosan Methyl**	0.15	U	ng/L	P412949	
		Trifluralin	0.21	U	ng/L	P412949	
		Chlordane	2.6	U	ng/L	P412949	
	EPA 8276	Toxaphene	15	U	ng/L	P412949	

Ref. Method and Comment:

EPA 8270E: MS accuracy for dieldrin not assessed due to high content of this parameter in the sample spiked.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P412949

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P412949

Component	Result	Code	Units
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P412949

Component	Result	Code	Units
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: P412949

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P412949

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	52.3		P	10 - 93.0
Alpha-BHC	86.6		P	75 - 106
Alpha-Chlordane	90.4		P	50 - 109
Beta-BHC	107		P	36 - 138
Beta-Cyfluthrin	99.5		P	23 - 167
Bifenthrin	85.7		P	11 - 123
Carbophenothion	57.5		P	18 - 96.0
Chlorothalonil	106		P	27 - 190
Cis-Nonachlor	78.8		P	40 - 111
Cypermethrin	92.0		P	25 - 155
Dacthal	85.8		P	72 - 119
DDD-p,p'	76.8		P	47 - 108
DDE-p,p'	80.0		P	48 - 107
DDT-p,p'	86.2		P	49 - 111
Delta-BHC	95.0		P	54 - 138
Deltamethrin	96.0		P	22 - 189
Dichlobenil	73.6		P	32 - 113
Dicofol	74.3		P	50 - 108
Dieldrin	85.3		P	56 - 110
Endosulfan I	79.6		P	60 - 105
Endosulfan II	72.9		P	50 - 120
Endosulfan Sulfate	89.1		P	55 - 121
Endrin	74.6		P	31 - 119
Endrin Aldehyde	73.8		P	36 - 116
Endrin Ketone	84.7		P	69 - 177
Esfenvalerate	89.0		P	10 - 179
Ethalfuralin	73.3		P	49 - 99.0
Fenpropathrin	92.6		P	35 - 119
Gamma-BHC	89.2		P	69 - 120
Gamma-Chlordane	74.7		P	45 - 107
Heptachlor	68.3		P	41 - 100
Heptachlor Epoxide	80.4		P	58 - 106
Hexachlorobenzene	78.8		P	39 - 100
Kepone	47.9		P	10 - 191
Lambda-Cyhalothrin	87.4		P	21 - 206
Methoprene	74.4		P	10 - 129
Methoxychlor	85.5		P	61 - 111
MGK-264	68.4		P	20 - 123
Mirex	71.4		P	10 - 182
Oxychlordane	71.9		P	39 - 110
PCB-1016	94.9		P	49 - 111
PCB-1260	87.1		P	42 - 116
Permethrin	99.9		P	26 - 152
Phenothrin	77.9		P	10 - 109
Piperonyl Butoxide	88.2		P	19 - 147
Prallethrin	61.5		P	14 - 109
Tau-Fluvalinate	87.3		P	16 - 134
Tetramethrin	86.4		P	10 - 125
Trans-Nonachlor	76.9		P	45 - 107
Triclosan Methyl	90.1		P	60 - 110
Trifluralin	78.5		P	44 - 101

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P412949

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	72.9		P	61 - 118
Toxaphene	66.5		P	51 - 122

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P412949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322194	PCB-1016	82.5	84.6	P/P	46 - 110
2322194	PCB-1260	83.7	88.1	P/P	42 - 111
2322373	Aldrin	46.0	51.5	P/P	10 - 89.0
2322373	Alpha-BHC	74.5	79.1	P/P	71 - 105
2322373	Alpha-Chlordane	69.1	73.1	P/P	43 - 107
2322373	Beta-BHC	87.0	93.4	P/P	57 - 152
2322373	Beta-Cyfluthrin	91.9	96.5	P/P	29 - 186
2322373	Bifenthrin	74.1	70.3	P/P	19 - 119
2322373	Carbophenothion	47.8	61.4	P/P	19 - 107
2322373	Chlorothalonil	115	116	P/P	10 - 245
2322373	Cis-Nonachlor	66.8	61.2	P/P	36 - 110
2322373	Cypermethrin	85.8	92.2	P/P	24 - 169
2322373	Dacthal	71.8	82.4	P/P	62 - 115
2322373	DDD-p,p'	66.3	68.0	P/P	36 - 109
2322373	DDE-p,p'	64.0	69.0	P/P	30 - 114
2322373	DDT-p,p'	63.0	72.6	P/P	42 - 108
2322373	Delta-BHC	87.8	94.9	P/P	60 - 164
2322373	Deltamethrin	98.4	97.2	P/P	10 - 210
2322373	Dichlobenil	86.4	94.1	P/P	23 - 108
2322373	Dicofol	61.1	63.6	P/P	44 - 109
2322373	Endosulfan I	64.8	73.7	P/P	52 - 105
2322373	Endosulfan II	62.7	71.6	P/P	35 - 127
2322373	Endosulfan Sulfate	72.5	88.4	P/P	39 - 130
2322373	Endrin	65.1	70.0	P/P	30 - 116
2322373	Endrin Aldehyde	60.1	53.1	P/P	20 - 110
2322373	Endrin Ketone	72.6	81.4	P/P	48 - 134
2322373	Esfenvalerate	89.4	90.9	P/P	10 - 199
2322373	Ethalfuralin	68.9	60.8	P/P	48 - 95.0
2322373	Fenpropathrin	98.6	87.0	P/P	37 - 121
2322373	Gamma-BHC	78.5	77.3	P/P	61 - 126
2322373	Gamma-Chlordane	64.6	70.0	P/P	39 - 105
2322373	Heptachlor	55.3	61.4	P/P	38 - 96.0
2322373	Heptachlor Epoxide	57.3	67.1	P/P	42 - 114
2322373	Hexachlorobenzene	72.4	74.0	P/P	39 - 93.0
2322373	Kepone	51.1	49.4	P/P	10 - 215
2322373	Lambda-Cyhalothrin	82.4	85.0	P/P	10 - 204
2322373	Methoprene	59.8	63.2	P/P	17 - 108
2322373	Methoxychlor	67.9	79.8	P/P	56 - 115
2322373	MGK-264	60.1	71.0	P/P	35 - 120
2322373	Mirex	60.2	62.3	P/P	10 - 178
2322373	Oxychlordane	59.8	66.2	P/P	47 - 91.0
2322373	Permethrin	91.7	89.1	P/P	27 - 170
2322373	Phenothrin	71.3	69.8	P/P	10 - 133
2322373	Piperonyl Butoxide	84.1	101	P/P	23 - 150
2322373	Prallethrin	53.9	59.4	P/P	21 - 113
2322373	Tau-Fluvalinate	87.4	85.3	P/P	16 - 158
2322373	Tetramethrin	81.6	101	P/P	22 - 132
2322373	Trans-Nonachlor	58.8	66.6	P/P	43 - 102
2322373	Triclosan Methyl	65.5	79.6	P/P	49 - 109
2322373	Trifluralin	66.5	69.6	P/P	48 - 93.0

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P412949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322194	Chlordane	69.2	78.5	P/P	55 - 128
2322194	Toxaphene	67.2	69.1	P/P	57 - 211

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P412949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322194	PCB-1016	2.46	Spike	P	0 - 32
2322194	PCB-1260	5.12	Spike	P	0 - 31
2322373	Aldrin	11.2	Spike	P	0 - 37
2322373	Alpha-BHC	5.91	Spike	P	0 - 16
2322373	Alpha-Chlordane	5.70	Spike	P	0 - 28
2322373	Beta-BHC	7.02	Spike	P	0 - 32
2322373	Beta-Cyfluthrin	4.89	Spike	P	0 - 41
2322373	Bifenthrin	5.19	Spike	P	0 - 36
2322373	Carbophenothion	25.0	Spike	P	0 - 30
2322373	Chlorothalonil	1.18	Spike	P	0 - 54
2322373	Cis-Nonachlor	8.83	Spike	P	0 - 33
2322373	Cypermethrin	7.12	Spike	P	0 - 38
2322373	Dacthal	13.6	Spike	P	0 - 23
2322373	DDD-p,p'	2.43	Spike	P	0 - 35
2322373	DDE-p,p'	7.53	Spike	P	0 - 27
2322373	DDT-p,p'	14.2	Spike	P	0 - 31
2322373	Delta-BHC	7.76	Spike	P	0 - 30
2322373	Deltamethrin	1.22	Spike	P	0 - 76
2322373	Dichlobenil	8.48	Spike	P	0 - 33
2322373	Dicofol	4.04	Spike	P	0 - 24
2322373	Dieldrin	12.2	Spike	P	0 - 35
2322373	Endosulfan I	12.9	Spike	P	0 - 25
2322373	Endosulfan II	13.2	Spike	P	0 - 31
2322373	Endosulfan Sulfate	19.7	Spike	P	0 - 38
2322373	Endrin	7.21	Spike	P	0 - 53
2322373	Endrin Aldehyde	12.3	Spike	P	0 - 81
2322373	Endrin Ketone	11.4	Spike	P	0 - 33
2322373	Esfenvalerate	1.72	Spike	P	0 - 46
2322373	Ethalfuralin	12.5	Spike	P	0 - 22
2322373	Fenpropathrin	12.5	Spike	P	0 - 29
2322373	Gamma-BHC	1.49	Spike	P	0 - 17
2322373	Gamma-Chlordane	7.99	Spike	P	0 - 28
2322373	Heptachlor	10.4	Spike	P	0 - 28
2322373	Heptachlor Epoxide	10.3	Spike	P	0 - 23
2322373	Hexachlorobenzene	2.27	Spike	P	0 - 22
2322373	Kepone	3.56	Spike	P	0 - 61
2322373	Lambda-Cyhalothrin	3.13	Spike	P	0 - 52
2322373	Methoprene	5.55	Spike	P	0 - 38
2322373	Methoxychlor	16.1	Spike	P	0 - 29
2322373	MGK-264	16.6	Spike	P	0 - 41
2322373	Mirex	3.35	Spike	P	0 - 39
2322373	Oxychlordane	10.2	Spike	P	0 - 33
2322373	Permethrin	2.90	Spike	P	0 - 39
2322373	Phenothrin	2.20	Spike	P	0 - 52
2322373	Piperonyl Butoxide	18.2	Spike	P	0 - 91
2322373	Prallethrin	9.80	Spike	P	0 - 34
2322373	Tau-Fluvalinate	2.44	Spike	P	0 - 41
2322373	Tetramethrin	20.8	Spike	P	0 - 43
2322373	Trans-Nonachlor	12.4	Spike	P	0 - 31
2322373	Triclosan Methyl	19.4	Spike	P	0 - 24
2322373	Trifluralin	4.57	Spike	P	0 - 23

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P412949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322194	Chlordane	12.5	Spike	P	0 - 25
2322194	Toxaphene	2.82	Spike	P	0 - 24

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

Quality Assurance Report Surrogates

Lab Sample ID: 2323013

Field Sample ID: 21030071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	65.6	P	38 - 115
EPA 8270E	Decachlorobiphenyl	68.4	P	31 - 118
EPA 8270E	Tetrachloro-m-xylene	49.6	P	29 - 98.0
EPA 8270E	Tetrachloro-m-xylene	51.0	P	28 - 96.0
EPA 8276	Decachlorobiphenyl	49.0	P	30 - 97.0
EPA 8276	PCNB	68.2	P	45 - 119

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A111934
Included Lab Sample IDs: 2323013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	103		P	80 - 120
Alpha-BHC	97.2		P	80 - 120
Alpha-Chlordane	105		P	80 - 120
Beta-BHC	97.8		P	80 - 120
Beta-Cyfluthrin	105		P	80 - 120
Bifenthrin	105		P	80 - 120
Carbophenothion	101		P	80 - 120
Chlorothalonil	95.7		P	80 - 120
Cis-Nonachlor	103		P	80 - 120
Cypermethrin	107		P	80 - 120
Dacthal	99.3		P	80 - 120
DDD-p,p'	108		P	80 - 120
DDE-p,p'	100		P	80 - 120
DDT-p,p'	96.3		P	80 - 120
Delta-BHC	94.9		P	80 - 120
Deltamethrin	105		P	80 - 120
Dichlobenil	101		P	80 - 120
Dicofol	98.2		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	97.7		P	80 - 120
Endosulfan II	113		P	80 - 120
Endosulfan Sulfate	114		P	80 - 120
Endrin	109		P	80 - 120
Endrin Aldehyde	99.5		P	80 - 120
Endrin Ketone	100		P	80 - 120
Esfenvalerate	112		P	80 - 120
Ethalfuralin	97.5		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	95.2		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	101		P	80 - 120
Heptachlor Epoxide	95.5		P	80 - 120
Hexachlorobenzene	99.3		P	80 - 120
Kepone	117		P	80 - 120
Lambda-Cyhalothrin	101		P	80 - 120
Methoprene	97.2		P	80 - 120
Methoxychlor	96.0		P	80 - 120
MGK-264	105		P	80 - 120
Mirex	105		P	80 - 120
Oxychlordane	92.6		P	80 - 120
Permethrin	109		P	80 - 120
Phenothrin	107		P	80 - 120
Piperonyl Butoxide	104		P	80 - 120
Prallethrin	99.2		P	80 - 120
Tau-Fluvalinate	107		P	80 - 120
Tetramethrin	106		P	80 - 120
Trans-Nonachlor	96.2		P	80 - 120
Triclosan Methyl	96.1		P	80 - 120
Trifluralin	93.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A111980
Included Lab Sample IDs: 2323013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	97.4		P	80 - 120
PCB-1260	98.7		P	80 - 120

Reference Method: EPA 8276
Run ID: A111981
Included Lab Sample IDs: 2323013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	102		P	80 - 120
Toxaphene	98.5		P	80 - 120

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8270E	Aldrin	52.3	46.0	51.5			11.2
	Alpha-BHC	86.6	74.5	79.1			5.91
	Alpha-Chlordane	90.4	69.1	73.1			5.70
	Beta-BHC	107	87.0	93.4			7.02
	Beta-Cyfluthrin	99.5	91.9	96.5			4.89
	Bifenthrin	85.7	74.1	70.3			5.19
	Carbophenothion	57.5	47.8	61.4			25.0
	Chlorothalonil	106	115	116			1.18
	Cis-Nonachlor	78.8	66.8	61.2			8.83
	Cypermethrin	92.0	85.8	92.2			7.12
	Dacthal	85.8	71.8	82.4			13.6
	DDD-p,p'	76.8	66.3	68.0			2.43
	DDE-p,p'	80.0	64.0	69.0			7.53
	DDT-p,p'	86.2	63.0	72.6			14.2
	Delta-BHC	95.0	87.8	94.9			7.76
	Deltamethrin	96.0	98.4	97.2			1.22
	Dichlobenil	73.6	86.4	94.1			8.48
	Dicofol	74.3	61.1	63.6			4.04
	Dieldrin	85.3					12.2
	Endosulfan I	79.6	64.8	73.7			12.9
	Endosulfan II	72.9	62.7	71.6			13.2
	Endosulfan Sulfate	89.1	72.5	88.4			19.7
	Endrin	74.6	65.1	70.0			7.21
	Endrin Aldehyde	73.8	60.1	53.1			12.3
	Endrin Ketone	84.7	72.6	81.4			11.4
	Esfenvalerate	89.0	89.4	90.9			1.72
	Ethalfuralin	73.3	68.9	60.8			12.5
	Fenpropathrin	92.6	98.6	87.0			12.5
	Gamma-BHC	89.2	78.5	77.3			1.49
	Gamma-Chlordane	74.7	64.6	70.0			7.99
	Heptachlor	68.3	55.3	61.4			10.4
	Heptachlor Epoxide	80.4	57.3	67.1			10.3
	Hexachlorobenzene	78.8	72.4	74.0			2.27
	Kepone	47.9	51.1	49.4			3.56
	Lambda-Cyhalothrin	87.4	82.4	85.0			3.13
	Methoprene	74.4	59.8	63.2			5.55
	Methoxychlor	85.5	67.9	79.8			16.1
	MGK-264	68.4	60.1	71.0			16.6
	Mirex	71.4	60.2	62.3			3.35
	Oxychlordane	71.9	59.8	66.2			10.2
	PCB-1016	94.9	82.5	84.6			2.46
	PCB-1260	87.1	83.7	88.1			5.12
	Permethrin	99.9	91.7	89.1			2.90
	Phenothrin	77.9	71.3	69.8			2.20
	Piperonyl Butoxide	88.2	84.1	101			18.2
	Prallethrin	61.5	53.9	59.4			9.80
	Tau-Fluvalinate	87.3	87.4	85.3			2.44
	Tetramethrin	86.4	81.6	101			20.8
	Trans-Nonachlor	76.9	58.8	66.6			12.4
	Triclosan Methyl	90.1	65.5	79.6			19.4
	Trifluralin	78.5	66.5	69.6			4.57
EPA 8276	Chlordane	72.9	69.2	78.5			12.5
	Toxaphene	66.5	67.2	69.1			2.82

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2323013
EPA 8270E	PCBs in water matrices by GC/MS/MS	2323013
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2323013

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8270E	04/28/2022	04/29/2022 08:00	Fe-Val Siddell	05/04/2022 03:42	Michael Poppell	2323013
	04/28/2022	04/29/2022 08:00	Fe-Val Siddell	05/07/2022 03:24	Arthur Maknenko	2323013
EPA 8276	04/28/2022	04/29/2022 08:00	Fe-Val Siddell	05/03/2022 16:18	Julie Wi	2323013