

Chemical Analysis Report

SE-DIST-2021-03-23-01

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

Event Description: **SMP - IRC canals 1**
Request ID: **RQ-2021-03-22-18**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Drew Liddick

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 07-APR-2021 09:43



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: Vero North Canal @ 66th Ave

Collection Date/Time: 03/22/2021 09:15

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233078	EPA 8270E	Aldrin	0.84	U	ng/L	P395389	
		Dieldrin	0.45	U	ng/L	P395389	
		Alpha-BHC	2.3	U	ng/L	P395389	
		Kepone**	6.2	U	ng/L	P395389	
		Alpha-Chlordane	1.1	U	ng/L	P395389	
		Beta-BHC	9.0	U	ng/L	P395389	
		Beta-Cyfluthrin**	17	U	ng/L	P395389	
		Bifenthrin**	4.5	U	ng/L	P395389	
		Delta-BHC	9.0	U	ng/L	P395389	
		Gamma-BHC	9.0	U	ng/L	P395389	
		Carbophenothion	11	U	ng/L	P395389	
		Chlorothalonil	2.3	U	ng/L	P395389	
		Cis-Nonachlor**	1.1	U	ng/L	P395389	
		Cypermethrin	23	U	ng/L	P395389	
		Dacthal**	1.1	U	ng/L	P395389	
		DDD-p,p'	5.6	U	ng/L	P395389	
		DDE-p,p'	5.6	U	ng/L	P395389	
		DDT-p,p'	6.8	U	ng/L	P395389	
		Deltamethrin**	23	U	ng/L	P395389	
		Dicofol	34	U	ng/L	P395389	
		Endosulfan I	4.5	U	ng/L	P395389	
		Endosulfan II	4.5	U	ng/L	P395389	
		Endosulfan Sulfate	2.3	U	ng/L	P395389	
		Endrin	2.3	U	ng/L	P395389	
		Endrin Aldehyde	2.3	U	ng/L	P395389	
		Endrin Ketone	2.3	U	ng/L	P395389	
		Ethalfuralin**	3.4	U	ng/L	P395389	
		Gamma-Chlordane	1.1	U	ng/L	P395389	
		Dichlobenil**	2.3	U	ng/L	P395389	
		Esfenvalerate**	23	U	ng/L	P395389	
		Fenpropathrin**	11	U	ng/L	P395389	
		Heptachlor	1.7	U	ng/L	P395389	
		Heptachlor Epoxide	2.3	U	ng/L	P395389	
		Hexachlorobenzene	2.3	U	ng/L	P395389	
		Lambda-Cyhalothrin**	17	U	ng/L	P395389	
		Methoxychlor	4.5	U	ng/L	P395389	
		Mirex	2.3	U	ng/L	P395389	
		MGK-264**	3.4	U	ng/L	P395389	
		Permethrin	11	U	ng/L	P395389	
		Phenothrin**	34	U	ng/L	P395389	
		Piperonyl Butoxide**	1.7	U	ng/L	P395389	
		Prallethrin**	28	U	ng/L	P395389	
		Tau-Fluvalinate**	3.9	U	ng/L	P395389	
		Tetramethrin**	9.0	U	ng/L	P395389	

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233078	EPA 8270E	Trans-Nonachlor**	1.1	U	ng/L	P395389	
		Triclosan Methyl**	1.1	U	ng/L	P395389	
		Trifluralin	2.8	U	ng/L	P395389	
	EPA 8276	Chlordane	5.6	U	ng/L	P395389	
		Toxaphene	34	U	ng/L	P395389	

Sample Location: North Canal @ US1

Collection Date/Time: 03/22/2021 09:30

Field ID: G5SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233079	EPA 8270E	Aldrin	0.83	U	ng/L	P395389	
		Dieldrin	0.44	U	ng/L	P395389	
		Alpha-BHC	2.2	U	ng/L	P395389	
		Kepone**	6.1	U	ng/L	P395389	
		Alpha-Chlordane	1.1	U	ng/L	P395389	
		Beta-BHC	8.8	U	ng/L	P395389	
		Beta-Cyfluthrin**	17	U	ng/L	P395389	
		Bifenthrin**	4.4	U	ng/L	P395389	
		Delta-BHC	8.8	U	ng/L	P395389	
		Gamma-BHC	8.8	U	ng/L	P395389	
		Carbophenothion	11	U	ng/L	P395389	
		Chlorothalonil	2.2	U	ng/L	P395389	
		Cis-Nonachlor**	1.1	U	ng/L	P395389	
		Cypermethrin	22	U	ng/L	P395389	
		Dacthal**	1.1	U	ng/L	P395389	
		DDD-p,p'	5.5	U	ng/L	P395389	
		DDE-p,p'	5.5	U	ng/L	P395389	
		DDT-p,p'	6.6	U	ng/L	P395389	
		Deltamethrin**	22	U	ng/L	P395389	
		Dicofol	33	U	ng/L	P395389	
		Endosulfan I	4.4	U	ng/L	P395389	
		Endosulfan II	4.4	U	ng/L	P395389	
		Endosulfan Sulfate	2.2	U	ng/L	P395389	
		Endrin	2.2	U	ng/L	P395389	
		Endrin Aldehyde	2.2	U	ng/L	P395389	
		Endrin Ketone	2.2	U	ng/L	P395389	
		Ethalfuralin**	3.3	U	ng/L	P395389	
		Gamma-Chlordane	1.1	U	ng/L	P395389	
		Dichlobenil**	2.2	U	ng/L	P395389	
		Esfenvalerate**	22	U	ng/L	P395389	
		Fenpropathrin**	11	U	ng/L	P395389	
		Heptachlor	1.7	U	ng/L	P395389	
		Heptachlor Epoxide	2.2	U	ng/L	P395389	
		Hexachlorobenzene	2.2	U	ng/L	P395389	
		Lambda-Cyhalothrin**	17	U	ng/L	P395389	
		Methoxychlor	4.4	U	ng/L	P395389	
		Mirex	2.2	U	ng/L	P395389	
		MGK-264**	3.3	U	ng/L	P395389	
		Permethrin	11	U	ng/L	P395389	
		Phenothrin**	33	U	ng/L	P395389	
		Piperonyl Butoxide**	1.7	U	ng/L	P395389	
		Prallethrin**	28	U	ng/L	P395389	
		Tau-Fluvalinate**	3.9	U	ng/L	P395389	
		Tetramethrin**	8.8	U	ng/L	P395389	

Field ID: G5SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233079	EPA 8270E	Trans-Nonachlor**	1.1	U	ng/L	P395389	
		Triclosan Methyl**	1.1	U	ng/L	P395389	
		Trifluralin	2.8	U	ng/L	P395389	
	EPA 8276	Chlordane	5.5	U	ng/L	P395389	
		Toxaphene	33	U	ng/L	P395389	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P395389

Component	Result	Code	Units
Aldrin	0.75	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	8.0	U	ng/L
Beta-Cyfluthrin	15	U	ng/L
Bifenthrin	4.0	U	ng/L
Carbophenothion	10	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cis-Nonachlor	1.0	U	ng/L
Cypermethrin	20	U	ng/L
Dacthal	1.0	U	ng/L
DDD-p,p'	5.0	U	ng/L
DDE-p,p'	5.0	U	ng/L
DDT-p,p'	6.0	U	ng/L
Delta-BHC	8.0	U	ng/L
Deltamethrin	20	U	ng/L
Dichlobenil	2.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Esfenvalerate	20	U	ng/L
Ethalfuralin	3.0	U	ng/L
Fenpropathrin	10	U	ng/L
Gamma-BHC	8.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Hexachlorobenzene	2.0	U	ng/L
Kepone	5.5	U	ng/L
Lambda-Cyhalothrin	15	U	ng/L
Methoxychlor	4.0	U	ng/L
MGK-264	3.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Phenothrin	30	U	ng/L
Piperonyl Butoxide	1.5	U	ng/L
Prallethrin	25	U	ng/L
Tau-Fluvalinate	3.5	U	ng/L
Tetramethrin	8.0	U	ng/L
Trans-Nonachlor	1.0	U	ng/L
Triclosan Methyl	1.0	U	ng/L
Trifluralin	2.5	U	ng/L

Reference Method: EPA 8276

Batch ID: P395389

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276
Batch ID: P395389

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P395389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	38.5	39.6	P/P	20 - 110
Alpha-BHC	78.7	83.2	P/P	58 - 130
Alpha-Chlordane	75.8	84.1	P/P	61 - 105
Beta-BHC	89.6	93.1	P/P	53 - 164
Beta-Cyfluthrin	110	123	P/P	40 - 140
Bifenthrin	74.4	88.7	P/P	44 - 122
Carbophenothion	57.1	70.0	P/P	20 - 161
Chlorothalonil	124	126	P/P	20 - 201
Cis-Nonachlor	81.5	90.7	P/P	60 - 110
Cypermethrin	87.3	100	P/P	43 - 131
Dacthal	87.7	93.3	P/P	76 - 108
DDD-p,p'	85.6	94.4	P/P	68 - 118
DDE-p,p'	74.4	85.4	P/P	56 - 107
DDT-p,p'	72.6	79.7	P/P	55 - 122
Delta-BHC	124	130	P/P	60 - 181
Deltamethrin	90.9	99.7	P/P	51 - 139
Dichlobenil	52.4	52.1	P/P	20 - 106
Dicofol	99.3	103	P/P	56 - 130
Dieldrin	66.4	71.2	P/P	58 - 112
Endosulfan I	83.0	87.8	P/P	68 - 115
Endosulfan II	103	112	P/P	69 - 133
Endosulfan Sulfate	99.2	102	P/P	65 - 126
Endrin	83.7	87.3	P/P	66 - 118
Endrin Aldehyde	98.5	109	P/P	60 - 132
Endrin Ketone	89.7	94.9	P/P	68 - 121
Esfenvalerate	69.6	85.3	P/P	42 - 116
Ethalfuralin	70.5	76.5	P/P	50 - 118
Fenpropathrin	88.7	98.8	P/P	55 - 132
Gamma-BHC	89.5	92.7	P/P	65 - 147
Gamma-Chlordane	71.3	80.2	P/P	56 - 103
Heptachlor	62.2	69.6	P/P	47 - 95.0
Heptachlor Epoxide	80.0	86.4	P/P	67 - 107
Hexachlorobenzene	61.8	68.3	P/P	45 - 99.0
Kepone	107	113	P/P	28 - 128
Lambda-Cyhalothrin	86.6	100	P/P	41 - 135
Methoxychlor	87.6	92.0	P/P	61 - 138
MGK-264	65.3	70.9	P/P	20 - 109
Mirex	61.1	73.6	P/P	36 - 92.0
Permethrin	71.5	83.4	P/P	45 - 111
Phenothrin	51.3	64.2	P/P	22 - 88.0
Piperonyl Butoxide	103	108	P/P	67 - 120
Prallethrin	67.7	74.8	P/P	28 - 92.0
Tau-Fluvalinate	95.0	109	P/P	38 - 145
Tetramethrin	95.8	106	P/P	29 - 150
Trans-Nonachlor	74.6	84.2	P/P	54 - 105
Triclosan Methyl	91.4	100	P/P	76 - 115
Trifluralin	70.7	77.0	P/P	53 - 111

Reference Method: EPA 8276
Batch ID: P395389

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

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P395389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	106	99.3	P/P	56 - 117
Toxaphene	78.8	81.5	P/P	45 - 116

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P395389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233148	Aldrin	51.5	54.3	P/P	22 - 127
2233148	Dieldrin	71.6	68.4	P/P	52 - 123
2233148	Kepone	104	101	P/P	18 - 138
2233449	Alpha-BHC	80.2	78.0	P/P	53 - 147
2233449	Alpha-Chlordane	78.1	78.1	P/P	56 - 107
2233449	Beta-BHC	94.0	102	P/P	43 - 182
2233449	Beta-Cyfluthrin	109	105	P/P	42 - 157
2233449	Bifenthrin	81.0	76.4	P/P	52 - 124
2233449	Carbophenothion	86.3	89.5	P/P	40 - 172
2233449	Chlorothalonil	122	119	P/P	10 - 265
2233449	Cis-Nonachlor	81.9	84.0	P/P	55 - 112
2233449	Cypermethrin	92.1	88.0	P/P	46 - 144
2233449	Dacthal	90.7	91.7	P/P	72 - 110
2233449	DDD-p,p'	85.9	87.9	P/P	58 - 123
2233449	DDE-p,p'	76.8	80.4	P/P	52 - 106
2233449	DDT-p,p'	73.0	71.4	P/P	50 - 127
2233449	Delta-BHC	138	143	P/P	56 - 222
2233449	Deltamethrin	96.8	91.6	P/P	47 - 152
2233449	Dichlobenil	46.3	45.2	P/P	22 - 99.0
2233449	Dicofol	99.0	95.1	P/P	38 - 145
2233449	Endosulfan I	88.4	87.5	P/P	64 - 124
2233449	Endosulfan II	95.5	100	P/P	52 - 159
2233449	Endosulfan Sulfate	98.9	96.5	P/P	62 - 136
2233449	Endrin	87.0	88.3	P/P	57 - 126
2233449	Endrin Aldehyde	106	110	P/P	41 - 128
2233449	Endrin Ketone	93.5	90.7	P/P	67 - 129
2233449	Esfenvalerate	77.2	74.6	P/P	50 - 120
2233449	Ethalfuralin	71.6	68.2	P/P	41 - 125
2233449	Fenpropathrin	87.7	89.5	P/P	40 - 202
2233449	Gamma-BHC	96.9	98.7	P/P	58 - 180
2233449	Gamma-Chlordane	73.9	74.3	P/P	54 - 103
2233449	Heptachlor	63.8	57.4	P/P	46 - 94.0
2233449	Heptachlor Epoxide	82.0	82.0	P/P	62 - 111
2233449	Hexachlorobenzene	62.2	60.0	P/P	42 - 95.0
2233449	Lambda-Cyhalothrin	95.2	92.0	P/P	37 - 162
2233449	Methoxychlor	85.5	82.5	P/P	52 - 143
2233449	MGK-264	77.5	77.4	P/P	37 - 102
2233449	Mirex	67.4	67.0	P/P	43 - 91.0
2233449	Permethrin	75.8	73.0	P/P	48 - 113
2233449	Phenothrin	64.4	63.8	P/P	30 - 104
2233449	Piperonyl Butoxide	103	100	P/P	67 - 127
2233449	Prallethrin	67.3	71.1	P/P	28 - 102
2233449	Tau-Fluvalinate	99.7	97.9	P/P	46 - 174
2233449	Tetramethrin	94.5	93.0	P/P	28 - 176
2233449	Trans-Nonachlor	77.0	77.9	P/P	51 - 103
2233449	Triclosan Methyl	92.5	95.7	P/P	67 - 116
2233449	Trifluralin	70.9	69.3	P/P	47 - 118

Reference Method: EPA 8276
Batch ID: P395389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P395389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233148	Chlordane	106	85.6	P/P	47 - 128
2233148	Toxaphene	88.4	85.3	P/P	11 - 163

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P395389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233148	Aldrin	5.24	Spike	P	0 - 30
2233148	Dieldrin	4.58	Spike	P	0 - 30
2233148	Kepone	2.03	Spike	P	0 - 30
2233449	Alpha-BHC	2.78	Spike	P	0 - 30
2233449	Alpha-Chlordane	0.0717	Spike	P	0 - 30
2233449	Beta-BHC	7.98	Spike	P	0 - 30
2233449	Beta-Cyfluthrin	4.09	Spike	P	0 - 30
2233449	Bifenthrin	5.81	Spike	P	0 - 30
2233449	Carbophenothion	3.72	Spike	P	0 - 30
2233449	Chlorothalonil	2.02	Spike	P	0 - 30
2233449	Cis-Nonachlor	2.57	Spike	P	0 - 30
2233449	Cypermethrin	4.46	Spike	P	0 - 30
2233449	Dacthal	1.18	Spike	P	0 - 30
2233449	DDD-p,p'	2.33	Spike	P	0 - 30
2233449	DDE-p,p'	4.59	Spike	P	0 - 30
2233449	DDT-p,p'	2.26	Spike	P	0 - 30
2233449	Delta-BHC	4.00	Spike	P	0 - 30
2233449	Deltamethrin	5.51	Spike	P	0 - 30
2233449	Dichlobenil	2.33	Spike	P	0 - 30
2233449	Dicofol	4.04	Spike	P	0 - 30
2233449	Endosulfan I	1.01	Spike	P	0 - 30
2233449	Endosulfan II	5.01	Spike	P	0 - 30
2233449	Endosulfan Sulfate	2.50	Spike	P	0 - 30
2233449	Endrin	1.53	Spike	P	0 - 30
2233449	Endrin Aldehyde	3.50	Spike	P	0 - 30
2233449	Endrin Ketone	3.03	Spike	P	0 - 30
2233449	Esfenvalerate	3.46	Spike	P	0 - 30
2233449	Ethalfuralin	4.92	Spike	P	0 - 30
2233449	Fenpropathrin	2.04	Spike	P	0 - 30
2233449	Gamma-BHC	1.78	Spike	P	0 - 30
2233449	Gamma-Chlordane	0.473	Spike	P	0 - 30
2233449	Heptachlor	10.6	Spike	P	0 - 30
2233449	Heptachlor Epoxide	0.0842	Spike	P	0 - 30
2233449	Hexachlorobenzene	3.61	Spike	P	0 - 30
2233449	Lambda-Cyhalothrin	3.48	Spike	P	0 - 30
2233449	Methoxychlor	3.65	Spike	P	0 - 30
2233449	MGK-264	0.0555	Spike	P	0 - 30
2233449	Mirex	0.732	Spike	P	0 - 30
2233449	Permethrin	3.75	Spike	P	0 - 30
2233449	Phenothrin	0.902	Spike	P	0 - 30
2233449	Piperonyl Butoxide	2.40	Spike	P	0 - 30
2233449	Prallethrin	5.57	Spike	P	0 - 30
2233449	Tau-Fluvalinate	1.85	Spike	P	0 - 30
2233449	Tetramethrin	1.57	Spike	P	0 - 30
2233449	Trans-Nonachlor	1.26	Spike	P	0 - 30
2233449	Triclosan Methyl	3.45	Spike	P	0 - 30
2233449	Trifluralin	2.40	Spike	P	0 - 30
LFB	Aldrin	2.80	LCS	P	0 - 30
LFB	Alpha-BHC	5.62	LCS	P	0 - 30
LFB	Alpha-Chlordane	10.5	LCS	P	0 - 30
LFB	Beta-BHC	3.88	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P395389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Beta-Cyfluthrin	11.3	LCS	P	0 - 30
LFB	Bifenthrin	17.5	LCS	P	0 - 30
LFB	Carbophenothion	20.2	LCS	P	0 - 30
LFB	Chlorothalonil	2.11	LCS	P	0 - 30
LFB	Cis-Nonachlor	10.6	LCS	P	0 - 30
LFB	Cypermethrin	13.6	LCS	P	0 - 30
LFB	Dacthal	6.22	LCS	P	0 - 30
LFB	DDD-p,p'	9.79	LCS	P	0 - 30
LFB	DDE-p,p'	13.9	LCS	P	0 - 30
LFB	DDT-p,p'	9.42	LCS	P	0 - 30
LFB	Delta-BHC	4.85	LCS	P	0 - 30
LFB	Deltamethrin	9.14	LCS	P	0 - 30
LFB	Dichlobenil	0.571	LCS	P	0 - 30
LFB	Dicofol	3.17	LCS	P	0 - 30
LFB	Dieldrin	7.06	LCS	P	0 - 30
LFB	Endosulfan I	5.61	LCS	P	0 - 30
LFB	Endosulfan II	8.56	LCS	P	0 - 30
LFB	Endosulfan Sulfate	2.76	LCS	P	0 - 30
LFB	Endrin	4.24	LCS	P	0 - 30
LFB	Endrin Aldehyde	10.5	LCS	P	0 - 30
LFB	Endrin Ketone	5.67	LCS	P	0 - 30
LFB	Esfenvalerate	20.2	LCS	P	0 - 30
LFB	Ethalfuralin	8.10	LCS	P	0 - 30
LFB	Fenpropathrin	10.8	LCS	P	0 - 30
LFB	Gamma-BHC	3.52	LCS	P	0 - 30
LFB	Gamma-Chlordane	11.7	LCS	P	0 - 30
LFB	Heptachlor	11.2	LCS	P	0 - 30
LFB	Heptachlor Epoxide	7.68	LCS	P	0 - 30
LFB	Hexachlorobenzene	9.90	LCS	P	0 - 30
LFB	Kepone	5.33	LCS	P	0 - 30
LFB	Lambda-Cyhalothrin	14.8	LCS	P	0 - 30
LFB	Methoxychlor	4.84	LCS	P	0 - 30
LFB	MGK-264	8.30	LCS	P	0 - 30
LFB	Mirex	18.6	LCS	P	0 - 30
LFB	Permethrin	15.4	LCS	P	0 - 30
LFB	Phenothrin	22.4	LCS	P	0 - 30
LFB	Piperonyl Butoxide	5.21	LCS	P	0 - 30
LFB	Prallethrin	9.95	LCS	P	0 - 30
LFB	Tau-Fluvalinate	13.5	LCS	P	0 - 30
LFB	Tetramethrin	10.5	LCS	P	0 - 30
LFB	Trans-Nonachlor	12.1	LCS	P	0 - 30
LFB	Triclosan Methyl	8.95	LCS	P	0 - 30
LFB	Trifluralin	8.55	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P395389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233148	Chlordane	20.2	Spike	P	0 - 30
2233148	Toxaphene	3.62	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P395389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Chlordane	6.36	LCS	P	0 - 30
LFB	Toxaphene	3.34	LCS	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2233078

Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	84.7	P	40 - 123
EPA 8270E	Decachlorobiphenyl	74.8	P	47 - 111
EPA 8270E	Tetrachloro-m-xylene	50.6	P	31 - 100
EPA 8270E	Tetrachloro-m-xylene	53.3	P	33 - 102
EPA 8276	Decachlorobiphenyl	68.1	P	29 - 92.0
EPA 8276	PCNB	74.8	P	43 - 134

Lab Sample ID: 2233079

Field Sample ID: G5SE0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	80.8	P	40 - 123
EPA 8270E	Decachlorobiphenyl	75.3	P	47 - 111
EPA 8270E	Tetrachloro-m-xylene	47.2	P	31 - 100
EPA 8270E	Tetrachloro-m-xylene	54.7	P	33 - 102
EPA 8276	Decachlorobiphenyl	61.4	P	29 - 92.0
EPA 8276	PCNB	72.6	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A104313

Included Lab Sample IDs: 2233078, 2233079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.2		P	80 - 120
Toxaphene	94.9		P	80 - 120

Reference Method: EPA 8270E

Run ID: A104325

Included Lab Sample IDs: 2233078, 2233079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alpha-BHC	99.3		P	80 - 120
Alpha-Chlordane	97.9		P	80 - 120
Beta-BHC	105		P	80 - 120
Beta-Cyfluthrin	115		P	80 - 120
Bifenthrin	94.9		P	80 - 120
Carbophenothion	100		P	80 - 120
Chlorothalonil	106		P	80 - 120
Cis-Nonachlor	96.2		P	80 - 120
Cypermethrin	92.8		P	80 - 120
Dacthal	99.1		P	80 - 120
DDD-p,p'	101		P	80 - 120
DDE-p,p'	101		P	80 - 120
DDT-p,p'	99.8		P	80 - 120
Delta-BHC	107		P	80 - 120
Deltamethrin	90.9		P	80 - 120
Dichlobenil	97.4		P	80 - 120
Dicofol	100		P	80 - 120
Endosulfan I	97.1		P	80 - 120
Endosulfan II	102		P	80 - 120
Endosulfan Sulfate	99.6		P	80 - 120
Endrin	95.2		P	80 - 120
Endrin Aldehyde	109		P	80 - 120
Endrin Ketone	96.6		P	80 - 120
Esfenvalerate	90.2		P	80 - 120
Ethalfuralin	98.8		P	80 - 120
Fenpropathrin	95.1		P	80 - 120
Gamma-BHC	101		P	80 - 120
Gamma-Chlordane	96.8		P	80 - 120
Heptachlor	93.8		P	80 - 120
Heptachlor Epoxide	97.9		P	80 - 120
Hexachlorobenzene	98.2		P	80 - 120
Lambda-Cyhalothrin	88.0		P	80 - 120
Methoxychlor	100		P	80 - 120
MGK-264	97.8		P	80 - 120
Mirex	100		P	80 - 120
Permethrin	89.5		P	80 - 120
Phenothrin	89.5		P	80 - 120
Piperonyl Butoxide	100		P	80 - 120
Prallethrin	93.7		P	80 - 120
Tau-Fluvalinate	97.2		P	80 - 120
Tetramethrin	99.2		P	80 - 120
Trans-Nonachlor	98.3		P	80 - 120
Triclosan Methyl	100		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A104325

Included Lab Sample IDs: 2233078, 2233079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Trifluralin	97.0		P	80 - 120

Reference Method: EPA 8270E

Run ID: A104405

Included Lab Sample IDs: 2233078, 2233079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Dieldrin	97.9		P	80 - 120
Kepone	107		P	80 - 120

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Aldrin	38.5	39.6	51.5	54.3	2.80	5.24
	Alpha-BHC	78.7	83.2	80.2	78.0	5.62	2.78
	Alpha-Chlordane	75.8	84.1	78.1	78.1	10.5	0.0717
	Beta-BHC	89.6	93.1	94.0	102	3.88	7.98
	Beta-Cyfluthrin	110	123	109	105	11.3	4.09
	Bifenthrin	74.4	88.7	81.0	76.4	17.5	5.81
	Carbophenothion	57.1	70.0	86.3	89.5	20.2	3.72
	Chlorothalonil	124	126	122	119	2.11	2.02
	Cis-Nonachlor	81.5	90.7	81.9	84.0	10.6	2.57
	Cypermethrin	87.3	100	92.1	88.0	13.6	4.46
	Dacthal	87.7	93.3	90.7	91.7	6.22	1.18
	DDD-p,p'	85.6	94.4	85.9	87.9	9.79	2.33
	DDE-p,p'	74.4	85.4	76.8	80.4	13.9	4.59
	DDT-p,p'	72.6	79.7	73.0	71.4	9.42	2.26
	Delta-BHC	124	130	138	143	4.85	4.00
	Deltamethrin	90.9	99.7	96.8	91.6	9.14	5.51
	Dichlobenil	52.4	52.1	46.3	45.2	0.571	2.33
	Dicofol	99.3	103	99.0	95.1	3.17	4.04
	Dieldrin	66.4	71.2	71.6	68.4	7.06	4.58
	Endosulfan I	83.0	87.8	88.4	87.5	5.61	1.01
	Endosulfan II	103	112	95.5	100	8.56	5.01
	Endosulfan Sulfate	99.2	102	98.9	96.5	2.76	2.50
	Endrin	83.7	87.3	87.0	88.3	4.24	1.53
	Endrin Aldehyde	98.5	109	106	110	10.5	3.50
	Endrin Ketone	89.7	94.9	93.5	90.7	5.67	3.03
	Esfenvalerate	69.6	85.3	77.2	74.6	20.2	3.46
	Ethalfuralin	70.5	76.5	71.6	68.2	8.10	4.92
	Fenpropathrin	88.7	98.8	87.7	89.5	10.8	2.04
	Gamma-BHC	89.5	92.7	96.9	98.7	3.52	1.78
	Gamma-Chlordane	71.3	80.2	73.9	74.3	11.7	0.473
	Heptachlor	62.2	69.6	63.8	57.4	11.2	10.6
	Heptachlor Epoxide	80.0	86.4	82.0	82.0	7.68	0.0842
	Hexachlorobenzene	61.8	68.3	62.2	60.0	9.90	3.61
	Kepone	107	113	104	101	5.33	2.03
	Lambda-Cyhalothrin	86.6	100	95.2	92.0	14.8	3.48
	Methoxychlor	87.6	92.0	85.5	82.5	4.84	3.65
	MGK-264	65.3	70.9	77.5	77.4	8.30	0.0555
	Mirex	61.1	73.6	67.4	67.0	18.6	0.732
	Permethrin	71.5	83.4	75.8	73.0	15.4	3.75
	Phenothrin	51.3	64.2	64.4	63.8	22.4	0.902
	Piperonyl Butoxide	103	108	103	100	5.21	2.40
	Prallethrin	67.7	74.8	67.3	71.1	9.95	5.57
	Tau-Fluvalinate	95.0	109	99.7	97.9	13.5	1.85
	Tetramethrin	95.8	106	94.5	93.0	10.5	1.57
	Trans-Nonachlor	74.6	84.2	77.0	77.9	12.1	1.26
	Triclosan Methyl	91.4	100	92.5	95.7	8.95	3.45
	Trifluralin	70.7	77.0	70.9	69.3	8.55	2.40
EPA 8276	Chlordane	106	99.3	106	85.6	6.36	20.2
	Toxaphene	81.5	78.8	88.4	85.3	3.34	3.62

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8270E	Dieldrin (ultra low level) in water matrices by GC/MS/MS	2233078, 2233079
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS-SIM	2233078, 2233079
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2233078, 2233079

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8270E	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/26/2021 23:32	Arthur Maknenko	2233078
	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/27/2021 00:04	Arthur Maknenko	2233079
	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/31/2021 16:47	Michael Poppell	2233078
	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/31/2021 17:10	Michael Poppell	2233079
EPA 8276	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/27/2021 06:01	Julie Wi	2233078
	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/27/2021 06:56	Julie Wi	2233079