

Chemical Analysis Report

WQ-ASSESS-2017-04-14-01

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

Event Description: **RUN 11 Moccasin**

Request ID: **RQ-2017-04-10-25**

Customer: **WQ-ASSESS**

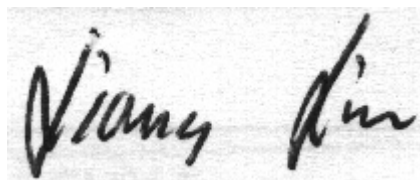
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
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Attn: Judy Ashton

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-MAY-2017 10:39

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 groups are included in this report: Metals, Nutrients 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 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: Moccasin Crk

Collection Date/Time: 04/13/2017 11:25

Field ID: G1SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889302	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P323515	
	SM 2320 B-97	Total Alkalinity	152		mg CaCO3/L	P324010	
	SM 2540 D-97	TSS	9	I	mg/L	P324586	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P324406	
1889303	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P323432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P323560	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323810	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P323564	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P323468	
1889304	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P323445	
1889336	EPA 200.7 Rev. 4.4	Iron	200	I	ug/L	P323748	
	EPA 200.8 Rev. 5.4	Arsenic	3.11		ug/L	P323748	
		Cadmium	0.060	U	ug/L	P323748	
		Chromium	1.2	U	ug/L	P323748	
		Copper	0.99	I	ug/L	P323748	
		Lead	0.25	I	ug/L	P323748	
		Nickel	0.60	U	ug/L	P323748	
		Silver	0.030	U	ug/L	P323748	
		Zinc	5.0	I	ug/L	P323748	

Sample Location: Moccasin Crk

Collection Date/Time: 04/13/2017 11:25

Field ID: G1SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889308	EPA 8321B	Glyphosate**	10	UJ	ug/L	P323390	SUR
		Sucralose**	0.91		ug/L	P323416	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P323392	
		Diuron	0.0040	U	ug/L	P323392	MS
		Fenuron	0.0080	U	ug/L	P323392	
		Imidacloprid	0.0040	U	ug/L	P323392	
		Bentazon	0.10		ug/L	P323392	
		Linuron	0.0040	U	ug/L	P323392	MS, RPD
		Acetaminophen**	0.010	U	ug/L	P323392	
		MCP	0.0040	U	ug/L	P323392	
		Carbamazepine**	5.8E-04	I	ug/L	P323392	
		Triclopyr**	0.010	U	ug/L	P323392	
		Primidone**	0.0080	U	ug/L	P323392	
		Fluridone**	0.018		ug/L	P323392	
1889309	EPA 8321B	Pyraclostrobin**	0.0020	U	ug/L	P323413	
1889334	EPA 8270D	Aldrin	4.1	UJ	ng/L	P323465	RPD
		Alpha-BHC	2.0	U	ng/L	P323465	
		Beta-BHC	4.1	U	ng/L	P323465	
		Delta-BHC	4.1	U	ng/L	P323465	
		Gamma-BHC	4.1	U	ng/L	P323465	

Field ID: G1SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889334	EPA 8270D	Carbophenothion	4.1	U	ng/L	P323465	
		Chlorothalonil	2.0	U	ng/L	P323465	
		Cypermethrin	20	U	ng/L	P323465	
		DDD-p,p'	2.0	U	ng/L	P323465	
		DDE-p,p'	3.1	U	ng/L	P323465	
		DDT-p,p'	3.1	U	ng/L	P323465	
		Dieldrin	4.1	U	ng/L	P323465	
		Endosulfan I	4.1	U	ng/L	P323465	
		Endosulfan II	4.1	U	ng/L	P323465	
		Endosulfan Sulfate	2.0	U	ng/L	P323465	
		Endrin	2.0	U	ng/L	P323465	
		Endrin Aldehyde	2.0	U	ng/L	P323465	
		Heptachlor	1.5	U	ng/L	P323465	
		Heptachlor Epoxide	2.0	U	ng/L	P323465	
		Methoxychlor	4.1	U	ng/L	P323465	
		Mirex	2.0	U	ng/L	P323465	
		Permethrin	10	U	ng/L	P323465	
		Trifluralin	1.0	U	ng/L	P323465	
		Alpha-Chlordane	1.0	U	ng/L	P323465	
		Gamma-Chlordane	1.0	U	ng/L	P323465	
		Endrin Ketone	2.0	U	ng/L	P323465	
		Dicofol	31	U	ng/L	P323465	
		Chlordane**	2.6	U	ng/L	P323465	
		Toxaphene**	13	U	ng/L	P323465	
1889335	EPA 8270D	Ametryn	7.1		ng/L	P323477	MS
		Atrazine	11		ng/L	P323477	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P323477	
		Chlorpyrifos Methyl	0.094	U	ng/L	P323477	
		Disulfoton	0.31	U	ng/L	P323477	
		Ethion	0.14	U	ng/L	P323477	
		Ethoprop	0.094	U	ng/L	P323477	
		Hexazinone	3.0		ng/L	P323477	
		Malathion	0.33	U	ng/L	P323477	
		Metribuzin	0.19	U	ng/L	P323477	MS
		Mevinphos	0.47	U	ng/L	P323477	
		Norflurazon	0.47	U	ng/L	P323477	
		Phorate	0.24	U	ng/L	P323477	
		Prometryn	0.19	U	ng/L	P323477	MS
		Simazine	0.47	U	ng/L	P323477	
		Atrazine Desethyl	1.4	U	ng/L	P323477	
		Prometon	0.85	U	ng/L	P323477	
		Fipronil	0.24	U	ng/L	P323477	
		Molinate	0.28	U	ng/L	P323477	
		Pendimethalin	1.4	U	ng/L	P323477	
		Terbufos	0.094	U	ng/L	P323477	

Field ID: G1SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1889335	EPA 8270D	EPTC	1.2	U	ng/L	P323477	
		Terbutylazine	0.40	U	ng/L	P323477	
		Bromacil	0.58	I	ng/L	P323477	
		Fipronil Sulfide	0.16	I	ng/L	P323477	
		Fipronil Sulfone	0.66		ng/L	P323477	RPD
		Alachlor	0.24	U	ng/L	P323477	
		Azinphos Methyl	2.1	U	ng/L	P323477	MS
		Butylate	0.38	U	ng/L	P323477	
		Demeton	1.9	U	ng/L	P323477	
		Diazinon	0.12	U	ng/L	P323477	
		Fenamiphos	0.24	U	ng/L	P323477	
		Fonofos	0.19	U	ng/L	P323477	
		Metalaxyl	0.19	U	ng/L	P323477	MS
		Metolachlor	0.24	U	ng/L	P323477	MS
		Acetochlor	0.24	U	ng/L	P323477	
		Cyanazine	0.47	U	ng/L	P323477	
		Parathion Ethyl	0.24	U	ng/L	P323477	
		Parathion Methyl	0.24	U	ng/L	P323477	

Ref. Method and Comment:
 EPA 8321B: Refer to the narrative for an explanation of QC Codes. Results confirmed in re-extraction.
 USGS O-2060-01: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.
 USGS O-2060-01: MS accuracy and precision for fluridone could not be assessed due to high concentration of parameter in the spiked sample.
 EPA 8270D: Refer to the narrative for an explanation of QC Codes.
 EPA 8270D: Second LFB was partially lost during preparation and is not reported. MS accuracy for Atrazine not assessed due to high content of this parameter in the sample spiked.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P323515

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P323748

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P323748

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Component	Result	Code	Units
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323432

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323560

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323810

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323564

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323445

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8270D
Batch ID: P323465

Component	Result	Code	Units
Aldrin	4.0	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	4.0	U	ng/L
Carbophenothion	4.0	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cypermethrin	20	U	ng/L
DDD-p,p'	2.0	U	ng/L
DDE-p,p'	3.0	U	ng/L
DDT-p,p'	3.0	U	ng/L
Delta-BHC	4.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	4.0	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270D

Batch ID: P323465

Component	Result	Code	Units
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Gamma-BHC	4.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Methoxychlor	4.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Trifluralin	1.0	U	ng/L

Reference Method: EPA 8270D

Batch ID: P323477

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.2	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	0.50	U	ng/L
Demeton	2.0	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.32	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P323477

Component	Result	Code	Units
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8276
Batch ID: P323465

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Toxaphene	12	U	ng/L

Reference Method: EPA 8321B
Batch ID: P323390

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P323413

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P323416

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P324010

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-97
Batch ID: P324586

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323468

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
 Batch ID: P323392

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P323748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P323748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	96.0		P	85 - 115
Chromium	96.7		P	85 - 115
Copper	96.8		P	85 - 115
Lead	94.9		P	85 - 115
Nickel	97.5		P	85 - 115
Silver	96.1		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P323432

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P323560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P323810

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

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P323810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P323564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P323445

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 8270D

Batch ID: P323465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	58.5	43.1	P/P	30 - 83.0
Alpha-BHC	95.1	89.3	P/P	62 - 119
Alpha-Chlordane	107	92.7	P/P	56 - 119
Beta-BHC	113	103	P/P	54 - 141
Carbophenothion	123	105	P/P	33 - 147
Chlorothalonil	100	97.0	P/P	25 - 175
Cypermethrin	119	101	P/P	50 - 155
DDD-p,p'	106	103	P/P	56 - 135
DDE-p,p'	110	95.8	P/P	48 - 120
DDT-p,p'	120	95.9	P/P	51 - 121
Delta-BHC	112	121	P/P	65 - 163
Dicofol	84.1	75.5	P/P	15 - 112
Dieldrin	116	98.2	P/P	59 - 134
Endosulfan I	113	93.4	P/P	65 - 142
Endosulfan II	121	108	P/P	65 - 154
Endosulfan Sulfate	98.6	100	P/P	65 - 136
Endrin	114	101	P/P	53 - 156
Endrin Aldehyde	111	109	P/P	47 - 156
Endrin Ketone	100	94.3	P/P	70 - 124
Gamma-BHC	101	97.6	P/P	64 - 142
Gamma-Chlordane	106	90.7	P/P	55 - 114
Heptachlor	99.8	79.0	P/P	42 - 105
Heptachlor Epoxide	107	93.0	P/P	67 - 120
Methoxychlor	113	96.8	P/P	63 - 134
Mirex	84.6	74.5	P/P	40 - 90.0
Permethrin	106	91.2	P/P	36 - 144
Trifluralin	130	117	P/P	40 - 170

Reference Method: EPA 8270D

Batch ID: P323477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	104		P	78 - 118
Alachlor	103		P	77 - 119

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P323477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ametryn	121		P	61 - 136
Atrazine	107		P	73 - 120
Atrazine Desethyl	91.6		P	16 - 122
Azinphos Methyl	121		P	69 - 186
Bromacil	91.7		P	40 - 125
Butylate	68.5		P	32 - 87.0
Chlorpyrifos Ethyl	106		P	53 - 110
Chlorpyrifos Methyl	104		P	31 - 119
Cyanazine	144		P	36 - 224
Demeton	118		P	39 - 122
Diazinon	107		P	75 - 119
Disulfoton	112		P	42 - 139
EPTC	66.8		P	33 - 96.0
Ethion	116		P	63 - 127
Ethoprop	103		P	65 - 107
Fenamiphos	134		P	64 - 137
Fipronil	115		P	60 - 126
Fipronil Sulfide	103		P	58 - 124
Fipronil Sulfone	102		P	57 - 126
Fonofos	97.8		P	65 - 111
Hexazinone	105		P	46 - 151
Malathion	115		P	68 - 132
Metalaxyl	103		P	51 - 132
Metolachlor	110		P	78 - 119
Metribuzin	128		P	64 - 138
Mevinphos	120		P	34 - 128
Molinate	79.3		P	44 - 101
Norflurazon	114		P	63 - 129
Parathion Ethyl	106		P	80 - 109
Parathion Methyl	102		P	74 - 125
Pendimethalin	103		P	48 - 134
Phorate	110		P	52 - 119
Prometon	113		P	69 - 124
Prometryn	119		P	66 - 124
Simazine	101		P	61 - 134
Terbufos	96.0		P	58 - 115
Terbuthylazine	103		P	77 - 113

Reference Method: EPA 8276

Batch ID: P323465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	96.4	85.7	P/P	44 - 118
Toxaphene	113	102	P/P	36 - 136

Reference Method: EPA 8321B

Batch ID: P323390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	96.2		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P323413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	100		P	40 - 140

Reference Method: EPA 8321B
 Batch ID: P323416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	115		P	40 - 140

Reference Method: SM 2320 B-97
 Batch ID: P324010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P324406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P323468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P323392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.2		P	40 - 140
Acetaminophen	76.8		P	40 - 140
Bentazon	134		P	40 - 140
Carbamazepine	97.2		P	40 - 140
Diuron	81.2		P	40 - 140
Fenuron	87.6		P	40 - 140
Fluridone	103		P	40 - 140
Imidacloprid	67.6		P	40 - 160
Linuron	52.8		P	40 - 140
MCP	98.0		P	40 - 140
Primidone	61.2		P	40 - 140
Triclopyr	100		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Iron	102		P	70 - 130

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887254	Iron	94.1	93.5	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Arsenic	110		P	70 - 130
1887121	Cadmium	99.9		P	70 - 130
1887121	Chromium	94.6		P	70 - 130
1887121	Copper	98.3		P	70 - 130
1887121	Lead	103		P	70 - 130
1887121	Nickel	102		P	70 - 130
1887121	Silver	96.1		P	70 - 130
1887121	Zinc	100		P	70 - 130
1887254	Arsenic	108	107	P/P	70 - 130
1887254	Cadmium	101	101	P/P	70 - 130
1887254	Chromium	91.4	91.1	P/P	70 - 130
1887254	Copper	93.7	93.9	P/P	70 - 130
1887254	Lead	103	103	P/P	70 - 130
1887254	Nickel	99.8	99.2	P/P	70 - 130
1887254	Silver	93.9	94.3	P/P	70 - 130
1887254	Zinc	94.8	92.6	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P323432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889321	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P323560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889072	Kjeldahl Nitrogen	92.8	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P323810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889140	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P323564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889071	Total-P	93.6	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P323445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889327	O-Phosphate-P	96.1	97.2	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P323465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889376	Aldrin	42.8	42.7	P/P	30 - 83.0
1889376	Alpha-BHC	92.8	87.2	P/P	62 - 119
1889376	Alpha-Chlordane	92.1	91.4	P/P	56 - 119
1889376	Beta-BHC	112	105	P/P	54 - 141
1889376	Carbophenothion	108	104	P/P	33 - 147
1889376	Chlorothalonil	134	146	P/P	25 - 175
1889376	Cypermethrin	98.0	103	P/P	50 - 155
1889376	DDD-p,p'	99.9	98.7	P/P	56 - 135
1889376	DDE-p,p'	97.5	95.8	P/P	48 - 120
1889376	DDT-p,p'	97.8	92.6	P/P	51 - 121
1889376	Delta-BHC	138	136	P/P	65 - 163
1889376	Dicofol	60.4	53.2	P/P	15 - 112
1889376	Dieldrin	98.4	93.6	P/P	59 - 134
1889376	Endosulfan I	99.9	104	P/P	65 - 142
1889376	Endosulfan II	112	116	P/P	65 - 154
1889376	Endosulfan Sulfate	96.1	95.9	P/P	65 - 136
1889376	Endrin	98.5	94.0	P/P	53 - 156
1889376	Endrin Aldehyde	99.3	92.7	P/P	47 - 156
1889376	Endrin Ketone	93.0	93.1	P/P	70 - 124
1889376	Gamma-BHC	108	102	P/P	64 - 142
1889376	Gamma-Chlordane	90.8	89.7	P/P	55 - 114
1889376	Heptachlor	84.1	78.7	P/P	42 - 105
1889376	Heptachlor Epoxide	93.6	90.4	P/P	67 - 120
1889376	Methoxychlor	100	93.4	P/P	63 - 134
1889376	Mirex	72.9	74.5	P/P	40 - 90.0
1889376	Permethrin	93.6	93.8	P/P	36 - 144
1889376	Trifluralin	118	127	P/P	40 - 170

Reference Method: EPA 8270D

Batch ID: P323477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887277	Acetochlor	109	109	P/P	74 - 123
1887277	Alachlor	95.5	106	P/P	73 - 124
1887277	Ametryn	162	160	F/F	56 - 149
1887277	Atrazine Desethyl	103	87.3	P/P	12 - 103
1887277	Azinphos Methyl	240	208	F/F	60 - 202
1887277	Bromacil	106	106	P/P	42 - 133
1887277	Butylate	33.2	36.3	P/P	10 - 85.0
1887277	Chlorpyrifos Ethyl	105	105	P/P	53 - 113
1887277	Chlorpyrifos Methyl	99.7	96.2	P/P	40 - 115
1887277	Cyanazine	148	120	P/P	22 - 210
1887277	Demeton	118	95.7	P/P	17 - 149
1887277	Diazinon	111	112	P/P	72 - 124
1887277	Disulfoton	100	102	P/P	43 - 139
1887277	EPTC	31.7	29.9	P/P	10 - 86.0
1887277	Ethion	116	111	P/P	65 - 131
1887277	Ethoprop	108	103	P/P	59 - 110
1887277	Fenamiphos	136	121	P/P	57 - 138
1887277	Fipronil	121	106	P/P	40 - 130
1887277	Fipronil Sulfide	113	95.8	P/P	36 - 128
1887277	Fipronil Sulfone	99.2	69.8	P/P	16 - 145

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P323477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887277	Fonofos	99.4	95.4	P/P	60 - 112
1887277	Hexazinone	110	110	P/P	69 - 142
1887277	Malathion	119	114	P/P	68 - 132
1887277	Metalaxyl	196	192	F/F	66 - 118
1887277	Metolachlor	216	211	F/F	71 - 124
1887277	Metribuzin	150	150	F/F	61 - 140
1887277	Mevinphos	98.4	96.4	P/P	38 - 130
1887277	Molinate	55.2	50.8	P/P	23 - 99.0
1887277	Norflurazon	108	94.8	P/P	39 - 139
1887277	Parathion Ethyl	109	110	P/P	75 - 111
1887277	Parathion Methyl	110	107	P/P	64 - 130
1887277	Pendimethalin	111	113	P/P	26 - 173
1887277	Phorate	94.4	99.5	P/P	43 - 127
1887277	Prometon	116	124	P/P	50 - 144
1887277	Prometryn	129	127	F/F	69 - 126
1887277	Simazine	137	135	P/P	51 - 152
1887277	Terbufos	101	96.0	P/P	54 - 125
1887277	Terbutylazine	109	110	P/P	76 - 113

Reference Method: EPA 8276

Batch ID: P323465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889334	Chlordane	71.3	73.6	P/P	44 - 118
1889334	Toxaphene	84.8	88.0	P/P	36 - 136

Reference Method: EPA 8321B

Batch ID: P323390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887304	Glyphosate	101	103	P/P	40 - 140

Reference Method: EPA 8321B

Batch ID: P323413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887272	Pyraclostrobin	92.0	98.8	P/P	40 - 140

Reference Method: EPA 8321B

Batch ID: P323416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888994	Sucralose	103	101	P/P	40 - 140

Reference Method: SM 4500 F-C-97

Batch ID: P324406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1889318	Fluoride	103	102	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P323468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888879	Organic Carbon	98.5	99.8	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P323392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888781	2,4-D	131	127	P/P	40 - 140
1888781	Acetaminophen	79.6	66.8	P/P	40 - 140
1888781	Carbamazepine	47.2	52.8	P/P	40 - 140
1888781	Diuron	40.8	37.2	P/F	40 - 140
1888781	Fenuron	42.0	41.2	P/P	40 - 140
1888781	Imidacloprid	67.3	72.9	P/P	40 - 160
1888781	Linuron	24.8	33.6	F/F	40 - 140
1888781	MCP	137	123	P/P	40 - 140
1888781	Primidone	53.6	58.0	P/P	40 - 140
1888781	Triclopyr	106	74.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P323515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889166	Turbidity	4.65	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Iron	0.612	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Arsenic	0.373	Spike	P	0 - 20
1887254	Cadmium	0.600	Spike	P	0 - 20
1887254	Chromium	0.363	Spike	P	0 - 20
1887254	Copper	0.185	Spike	P	0 - 20
1887254	Lead	0.141	Spike	P	0 - 20
1887254	Nickel	0.590	Spike	P	0 - 20
1887254	Silver	0.400	Spike	P	0 - 20
1887254	Zinc	1.73	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P323432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889321	Ammonia-N	0.0752	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P323560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889072	Kjeldahl Nitrogen	2.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P323810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889140	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P323564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889071	Total-P	0.0801	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P323445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889327	O-Phosphate-P	1.14	Spike	P	0 - 20

Reference Method: EPA 8270D
 Batch ID: P323465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889376	Aldrin	0.0561	Spike	P	0 - 30
1889376	Alpha-BHC	6.18	Spike	P	0 - 30
1889376	Alpha-Chlordane	0.734	Spike	P	0 - 30
1889376	Beta-BHC	6.83	Spike	P	0 - 30
1889376	Carbophenothion	3.79	Spike	P	0 - 30
1889376	Chlorothalonil	8.88	Spike	P	0 - 30
1889376	Cypermethrin	4.83	Spike	P	0 - 30
1889376	DDD-p,p'	1.28	Spike	P	0 - 30
1889376	DDE-p,p'	1.78	Spike	P	0 - 30
1889376	DDT-p,p'	5.45	Spike	P	0 - 30
1889376	Delta-BHC	1.42	Spike	P	0 - 30
1889376	Dicofol	12.6	Spike	P	0 - 30
1889376	Dieldrin	5.02	Spike	P	0 - 30
1889376	Endosulfan I	3.60	Spike	P	0 - 30
1889376	Endosulfan II	3.26	Spike	P	0 - 30
1889376	Endosulfan Sulfate	0.137	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P323465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889376	Endrin	4.67	Spike	P	0 - 30
1889376	Endrin Aldehyde	6.86	Spike	P	0 - 30
1889376	Endrin Ketone	0.111	Spike	P	0 - 30
1889376	Gamma-BHC	5.57	Spike	P	0 - 30
1889376	Gamma-Chlordane	1.24	Spike	P	0 - 30
1889376	Heptachlor	6.61	Spike	P	0 - 30
1889376	Heptachlor Epoxide	3.47	Spike	P	0 - 30
1889376	Methoxychlor	6.91	Spike	P	0 - 30
1889376	Mirex	2.26	Spike	P	0 - 30
1889376	Permethrin	0.270	Spike	P	0 - 30
1889376	Trifluralin	6.61	Spike	P	0 - 30
LFB	Aldrin	30.3	LCS	F	0 - 30
LFB	Alpha-BHC	6.28	LCS	P	0 - 30
LFB	Alpha-Chlordane	14.1	LCS	P	0 - 30
LFB	Beta-BHC	9.39	LCS	P	0 - 30
LFB	Carbophenothion	15.6	LCS	P	0 - 30
LFB	Chlorothalonil	3.56	LCS	P	0 - 30
LFB	Cypermethrin	17.0	LCS	P	0 - 30
LFB	DDD-p,p'	2.98	LCS	P	0 - 30
LFB	DDE-p,p'	13.8	LCS	P	0 - 30
LFB	DDT-p,p'	21.9	LCS	P	0 - 30
LFB	Delta-BHC	7.61	LCS	P	0 - 30
LFB	Dicofol	10.7	LCS	P	0 - 30
LFB	Dieldrin	16.8	LCS	P	0 - 30
LFB	Endosulfan I	19.0	LCS	P	0 - 30
LFB	Endosulfan II	11.2	LCS	P	0 - 30
LFB	Endosulfan Sulfate	1.55	LCS	P	0 - 30
LFB	Endrin	11.6	LCS	P	0 - 30
LFB	Endrin Aldehyde	2.28	LCS	P	0 - 30
LFB	Endrin Ketone	6.35	LCS	P	0 - 30
LFB	Gamma-BHC	3.51	LCS	P	0 - 30
LFB	Gamma-Chlordane	15.1	LCS	P	0 - 30
LFB	Heptachlor	23.3	LCS	P	0 - 30
LFB	Heptachlor Epoxide	14.5	LCS	P	0 - 30
LFB	Methoxychlor	15.2	LCS	P	0 - 30
LFB	Mirex	12.8	LCS	P	0 - 30
LFB	Permethrin	14.9	LCS	P	0 - 30
LFB	Trifluralin	10.3	LCS	P	0 - 30

Reference Method: EPA 8270D

Batch ID: P323477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887277	Acetochlor	0.484	Spike	P	0 - 30
1887277	Alachlor	10.6	Spike	P	0 - 30
1887277	Ametryn	0.832	Spike	P	0 - 30
1887277	Atrazine	21.9	Spike	P	0 - 30
1887277	Atrazine Desethyl	16.2	Spike	P	0 - 30
1887277	Azinphos Methyl	14.4	Spike	P	0 - 30
1887277	Bromacil	0.233	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P323477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887277	Butylate	8.83	Spike	P	0 - 30
1887277	Chlorpyrifos Ethyl	0.224	Spike	P	0 - 30
1887277	Chlorpyrifos Methyl	3.53	Spike	P	0 - 30
1887277	Cyanazine	20.4	Spike	P	0 - 30
1887277	Demeton	20.7	Spike	P	0 - 30
1887277	Diazinon	1.10	Spike	P	0 - 30
1887277	Disulfoton	2.24	Spike	P	0 - 30
1887277	EPTC	5.68	Spike	P	0 - 30
1887277	Ethion	4.56	Spike	P	0 - 30
1887277	Ethoprop	4.50	Spike	P	0 - 30
1887277	Fenamiphos	11.3	Spike	P	0 - 30
1887277	Fipronil	13.2	Spike	P	0 - 30
1887277	Fipronil Sulfide	16.6	Spike	P	0 - 30
1887277	Fipronil Sulfone	34.8	Spike	F	0 - 30
1887277	Fonofos	4.12	Spike	P	0 - 30
1887277	Hexazinone	0.145	Spike	P	0 - 30
1887277	Malathion	3.98	Spike	P	0 - 30
1887277	Metalaxyl	1.65	Spike	P	0 - 30
1887277	Metolachlor	1.77	Spike	P	0 - 30
1887277	Metribuzin	0.133	Spike	P	0 - 30
1887277	Mevinphos	2.00	Spike	P	0 - 30
1887277	Molinate	8.36	Spike	P	0 - 30
1887277	Norflurazon	12.9	Spike	P	0 - 30
1887277	Parathion Ethyl	0.482	Spike	P	0 - 30
1887277	Parathion Methyl	2.40	Spike	P	0 - 30
1887277	Pendimethalin	2.07	Spike	P	0 - 30
1887277	Phorate	5.24	Spike	P	0 - 30
1887277	Prometon	6.37	Spike	P	0 - 30
1887277	Prometryn	1.31	Spike	P	0 - 30
1887277	Simazine	1.12	Spike	P	0 - 30
1887277	Terbufos	5.41	Spike	P	0 - 30
1887277	Terbutylazine	0.872	Spike	P	0 - 30

Reference Method: EPA 8276

Batch ID: P323465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889334	Chlordane	3.19	Spike	P	0 - 30
1889334	Toxaphene	3.68	Spike	P	0 - 30
LFB	Chlordane	11.7	LCS	P	0 - 30
LFB	Toxaphene	9.72	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P323390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887304	Glyphosate	1.18	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P323413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887272	Pyraclostrobin	7.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P323416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888994	Sucralose	1.96	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P324010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888852	Total Alkalinity	1.11	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P324586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889088	TSS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P324406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1889318	Fluoride	0.464	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888879	Organic Carbon	1.20	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P323392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888781	2,4-D	2.50	Spike	P	0 - 30
1888781	Acetaminophen	17.5	Spike	P	0 - 30
1888781	Bentazon	3.17	Spike	P	0 - 30
1888781	Carbamazepine	10.9	Spike	P	0 - 30
1888781	Diuron	9.23	Spike	P	0 - 30
1888781	Fenuron	1.92	Spike	P	0 - 30
1888781	Imidacloprid	6.90	Spike	P	0 - 30
1888781	Linuron	30.0	Spike	F	0 - 30
1888781	MCP	10.8	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P323392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888781	Primidone	7.89	Spike	P	0 - 30
1888781	Triclopyr	14.0	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1889308
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	2.28	F	50 - 150
EPA 8321B	Sucralose-d6	132	P	40 - 150
USGS O-2060-01	2,4-D-d3	109	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	65.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	62.6	P	40 - 160
USGS O-2060-01	Diuron-d6	35.8	P	30 - 150
USGS O-2060-01	Primidone-d5	49.6	P	40 - 150

Lab Sample ID: 1889309
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	78.2	P	40 - 150

Lab Sample ID: 1889334
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	64.6	P	51 - 123
EPA 8270D	Tetrachloro-m-xylene	37.6	P	31 - 111
EPA 8276	Decachlorobiphenyl	55.1	P	41 - 106

Lab Sample ID: 1889335
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	83.9	P	62 - 132
EPA 8270D	Simazine-d10	88.8	P	72 - 127

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75792
Included Lab Sample IDs: 1889303

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75792

Included Lab Sample IDs: 1889303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75795

Included Lab Sample IDs: 1889304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	97.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A75799

Included Lab Sample IDs: 1889308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	78.8	78.4	P/P	70 - 130

Reference Method: SM 5310 B-00

Run ID: A75801

Included Lab Sample IDs: 1889303

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

Reference Method: EPA 8321B

Run ID: A75811

Included Lab Sample IDs: 1889308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	128	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75823

Included Lab Sample IDs: 1889302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A75845

Included Lab Sample IDs: 1889309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	129	114	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75870

Included Lab Sample IDs: 1889303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75877

Included Lab Sample IDs: 1889303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75926

Included Lab Sample IDs: 1889303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A75954

Included Lab Sample IDs: 1889334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.0		P	80 - 120
Toxaphene	106		P	80 - 120

Reference Method: EPA 8270D

Run ID: A75960

Included Lab Sample IDs: 1889334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.0		P	80 - 120
Alpha-BHC	99.0		P	80 - 120
Alpha-Chlordane	101		P	80 - 120
Beta-BHC	102		P	80 - 120
Carbophenothion	103		P	80 - 120
Chlorothalonil	108		P	80 - 120
Cypermethrin	101		P	80 - 120
DDD-p,p'	103		P	80 - 120
DDE-p,p'	104		P	80 - 120
DDT-p,p'	106		P	80 - 120
Delta-BHC	95.1		P	80 - 120
Dicofol	97.9		P	80 - 120
Dieldrin	101		P	80 - 120
Endosulfan I	96.3		P	80 - 120
Endosulfan II	94.9		P	80 - 120
Endosulfan Sulfate	96.6		P	80 - 120
Endrin	106		P	80 - 120
Endrin Aldehyde	95.0		P	80 - 120
Endrin Ketone	96.2		P	80 - 120
Gamma-BHC	101		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	101		P	80 - 120
Heptachlor Epoxide	98.7		P	80 - 120
Methoxychlor	110		P	80 - 120
Mirex	97.8		P	80 - 120
Permethrin	98.2		P	80 - 120
Trifluralin	101		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75972

Included Lab Sample IDs: 1889336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.9	93.8	P/P	90 - 110
Cadmium	97.0	95.1	P/P	90 - 110
Chromium	97.6	95.3	P/P	90 - 110
Copper	92.0	91.0	P/P	90 - 110
Lead	95.8	94.4	P/P	90 - 110
Nickel	91.3	90.8	P/P	90 - 110
Silver	95.2	94.0	P/P	90 - 110
Zinc	93.9	92.6	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75985

Included Lab Sample IDs: 1889308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.6	90.0	P/P	50 - 150
Bentazon	79.0	78.2	P/P	50 - 150
MCP	103	104	P/P	50 - 150
Triclopyr	80.6	76.8	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A75991

Included Lab Sample IDs: 1889336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.7	95.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75995

Included Lab Sample IDs: 1889302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76024

Included Lab Sample IDs: 1889308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	132	142	P/P	60 - 150
Carbamazepine	128	139	P/P	60 - 150
Diuron	113	131	P/P	60 - 150
Fenuron	121	130	P/P	60 - 150
Fluridone	141	140	P/P	60 - 150
Imidacloprid	108	112	P/P	60 - 150
Linuron	62.8	64.4	P/P	60 - 150
Primidone	96.8	94.4	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A76101

Included Lab Sample IDs: 1889335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	96.8		P	80 - 120
Alachlor	98.4		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine	96.1		P	80 - 120
Atrazine Desethyl	99.1		P	80 - 120
Azinphos Methyl	98.1		P	80 - 120
Bromacil	103		P	80 - 120
Butylate	99.8		P	80 - 120
Chlorpyrifos Ethyl	95.7		P	80 - 120
Chlorpyrifos Methyl	95.5		P	80 - 120
Cyanazine	94.6		P	80 - 120
Demeton	96.1		P	80 - 120
Diazinon	98.7		P	80 - 120
Disulfoton	92.3		P	80 - 120
EPTC	101		P	80 - 120
Ethion	93.6		P	80 - 120
Ethoprop	102		P	80 - 120
Fenamiphos	92.5		P	80 - 120
Fipronil	99.1		P	80 - 120
Fipronil Sulfide	95.1		P	80 - 120
Fipronil Sulfone	97.1		P	80 - 120
Fonofos	99.3		P	80 - 120
Hexazinone	98.6		P	80 - 120
Malathion	92.9		P	80 - 120
Metaxyl	96.7		P	80 - 120
Metolachlor	101		P	80 - 120
Metribuzin	97.7		P	80 - 120
Mevinphos	103		P	80 - 120
Molinate	101		P	80 - 120
Norflurazon	92.1		P	80 - 120
Parathion Ethyl	95.6		P	80 - 120
Parathion Methyl	102		P	80 - 120
Pendimethalin	95.2		P	80 - 120
Phorate	102		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	95.5		P	80 - 120
Simazine	102		P	80 - 120
Terbufos	95.5		P	80 - 120
Terbutylazine	96.4		P	80 - 120

Reference Method: SM 4500 F-C-97

Run ID: A76126

Included Lab Sample IDs: 1889302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110

* 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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							4.65	
EPA 200.7 Rev. 4.4	Iron	100		94.1	93.5	102			0.612
EPA 200.8 Rev. 5.4	Arsenic	98.0		110	108	107			0.373
	Cadmium	96.0		99.9	101	101			0.600
	Chromium	96.7		94.6	91.4	91.1			0.363
	Copper	96.8		98.3	93.7	93.9			0.185
	Lead	94.9		103	103	103			0.141
	Nickel	97.5		102	99.8	99.2			0.590
	Silver	96.1		96.1	93.9	94.3			0.400
	Zinc	97.2		100	94.8	92.6			1.73
EPA 350.1 Rev. 2.0	Ammonia-N	99.7		104	104				0.0752
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		92.8	96.0				2.69
EPA 353.2 Rev. 2.0	NO2NO3-N	101		103	103				0.0
EPA 365.1 Rev. 2.0	Total-P	101		93.6	93.7				0.0801
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9		96.1	97.2				1.14
EPA 8270D	Acetochlor	104		109	109				0.484
	Alachlor	103		95.5	106				10.6
	Aldrin	58.5	43.1	42.7	42.8	30.3			0.0561
	Alpha-BHC	95.1	89.3	87.2	92.8	6.28			6.18
	Alpha-Chlordane	107	92.7	92.1	91.4	14.1			0.734
	Ametryn	121		162	160				0.832
	Atrazine	107							21.9
	Atrazine Desethyl	91.6		103	87.3				16.2
	Azinphos Methyl	121		240	208				14.4
	Beta-BHC	113	103	105	112	9.39			6.83
	Bromacil	91.7		106	106				0.233
	Butylate	68.5		33.2	36.3				8.83
	Carbophenothion	123	105	104	108	15.6			3.79
	Chlorothalonil	100	97.0	146	134	3.56			8.88
	Chlorpyrifos Ethyl	106		105	105				0.224
	Chlorpyrifos Methyl	104		99.7	96.2				3.53
	Cyanazine	144		148	120				20.4
	Cypermethrin	119	101	103	98.0	17.0			4.83
	DDD-p,p'	106	103	98.7	99.9	2.98			1.28
	DDE-p,p'	110	95.8	95.8	97.5	13.8			1.78
	DDT-p,p'	120	95.9	92.6	97.8	21.9			5.45
	Delta-BHC	112	121	136	138	7.61			1.42
	Demeton	118		118	95.7				20.7
	Diazinon	107		111	112				1.10
	Dicofol	84.1	75.5	53.2	60.4	10.7			12.6
	Dieldrin	116	98.2	93.6	98.4	16.8			5.02
	Disulfoton	112		100	102				2.24
	Endosulfan I	113	93.4	104	99.9	19.0			3.60
	Endosulfan II	121	108	116	112	11.2			3.26
	Endosulfan Sulfate	98.6	100	95.9	96.1	1.55			0.137
	Endrin	114	101	94.0	98.5	11.6			4.67
	Endrin Aldehyde	111	109	92.7	99.3	2.28			6.86
	Endrin Ketone	100	94.3	93.0	93.1	6.35			0.111
	EPTC	66.8		31.7	29.9				5.68
	Ethion	116		116	111				4.56
	Ethoprop	103		108	103				4.50
	Fenamiphos	134		136	121				11.3
	Fipronil	115		121	106				13.2
	Fipronil Sulfide	103		113	95.8				16.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8270D	Fipronil Sulfone	102		99.2	69.8			34.8
	Fonofos	97.8		99.4	95.4			4.12
	Gamma-BHC	101	97.6	108	102	3.51		5.57
	Gamma-Chlordane	106	90.7	90.8	89.7	15.1		1.24
	Heptachlor	99.8	79.0	84.1	78.7	23.3		6.61
	Heptachlor Epoxide	107	93.0	93.6	90.4	14.5		3.47
	Hexazinone	105		110	110			0.145
	Malathion	115		119	114			3.98
	Metalaxyl	103		196	192			1.65
	Methoxychlor	113	96.8	100	93.4	15.2		6.91
	Metolachlor	110		216	211			1.77
	Metribuzin	128		150	150			0.133
	Mevinphos	120		98.4	96.4			2.00
	Mirex	84.6	74.5	72.9	74.5	12.8		2.26
	Molinate	79.3		55.2	50.8			8.36
	Norflurazon	114		108	94.8			12.9
	Parathion Ethyl	106		109	110			0.482
	Parathion Methyl	102		110	107			2.40
	Pendimethalin	103		111	113			2.07
	Permethrin	106	91.2	93.6	93.8	14.9		0.270
	Phorate	110		94.4	99.5			5.24
	Prometon	113		116	124			6.37
	Prometryn	119		129	127			1.31
	Simazine	101		137	135			1.12
	Terbufos	96.0		101	96.0			5.41
	Terbuthylazine	103		109	110			0.872
	Trifluralin	130	117	118	127	10.3		6.61
EPA 8276	Chlordane	96.4	85.7	71.3	73.6	11.7		3.19
	Toxaphene	113	102	84.8	88.0	9.72		3.68
EPA 8321B	Glyphosate	96.2		101	103			1.18
	Pyraclostrobin	100		92.0	98.8			7.13
	Sucralose	115		103	101			1.96
SM 2320 B-97	Total Alkalinity	102					1.11	
SM 2540 D-97	TSS						2.67	
SM 4500 F-C-97	Fluoride	97.7		103	102			0.464
SM 5310 B-00	Organic Carbon	101		98.5	99.8			1.20
USGS O-2060-01	2,4-D	83.2		131	127			2.50
	Acetaminophen	76.8		79.6	66.8			17.5
	Bentazon	134						3.17
	Carbamazepine	97.2		47.2	52.8			10.9
	Diuron	81.2		40.8	37.2			9.23
	Fenuron	87.6		42.0	41.2			1.92
	Fluridone	103						
	Imidacloprid	67.6		67.3	72.9			6.90
	Linuron	52.8		24.8	33.6			30.0
	MCPP	98.0		137	123			10.8
	Primidone	61.2		53.6	58.0			7.89
	Triclopyr	100		106	74.8			14.0

Reference Method Descriptions

Method / DoH Cert #

Description

Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1889302
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1889336
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1889336
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1889303
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1889303
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1889303
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1889303
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1889304
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1889334
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1889335
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1889334
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1889308
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1889309
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1889308
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1889302
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1889302
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1889302
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1889303
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1889308
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1889308

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/14/2017			04/14/2017 16:52	Blanca Fach	1889302
EPA 200.7 Rev. 4.4	04/14/2017	04/20/2017	Elliott D. Healy	04/25/2017	Martin Acosta	1889336
EPA 200.8 Rev. 5.4	04/14/2017	04/20/2017	Elliott D. Healy	04/24/2017	Betina Topolski	1889336
EPA 350.1 Rev. 2.0	04/14/2017			04/14/2017	Julie Michelle Frank	1889303
EPA 351.2 Rev. 2.0	04/14/2017	04/18/2017	Adrian Shelby	04/19/2017	Joseph Suarez	1889303
EPA 353.2 Rev. 2.0	04/14/2017			04/21/2017	Beverly Y. Sanders	1889303
EPA 365.1 Rev. 2.0	04/14/2017	04/18/2017	Adrian Shelby	04/19/2017	Lipi Saha	1889303
EPA 365.1 Rev. 2.0 dissolved	04/14/2017			04/14/2017 15:45	Anthony C. Onicha	1889304
EPA 8270D	04/14/2017	04/17/2017	John Kaba	04/22/2017	Irina Carbone	1889335
	04/14/2017	04/18/2017	Fe-Val Siddell	04/21/2017	Vandana T. Nagar	1889334
EPA 8276	04/14/2017	04/18/2017	Fe-Val Siddell	04/22/2017	Vandana T. Nagar	1889334
EPA 8321B	04/14/2017	04/14/2017	Mohammad Ghaffari	04/14/2017	Mohammad Ghaffari	1889308
	04/14/2017	04/16/2017	Fe-Val Siddell	04/19/2017	Juyoung Kim	1889309
	04/14/2017	04/16/2017	Mohammad Ghaffari	04/16/2017	Mohammad Ghaffari	1889308
SM 2320 B-97	04/14/2017			04/26/2017	Dale L. Simmons	1889302
SM 2540 D-97	04/14/2017			04/19/2017	Yijie Li	1889302
SM 4500 F-C-97	04/14/2017			05/02/2017	Dale L. Simmons	1889302
SM 5310 B-00	04/14/2017			04/15/2017	Julie Michelle Frank	1889303
USGS O-2060-01	04/14/2017	04/16/2017	Hoor Shaik	04/24/2017	Juyoung Kim	1889308
	04/14/2017	04/16/2017	Hoor Shaik	04/26/2017	Juyoung Kim	1889308