

Chemical Analysis Report

WQAP-2017-08-28-03

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

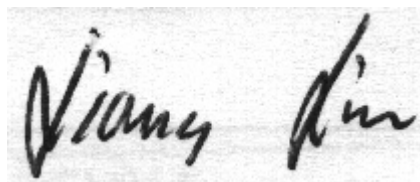
Event Description: **kit C_pesticides**
Request ID: **RQ-2017-08-14-46**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Michael Eckles

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-SEP-2017 12:02

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: Little Aucilla River @ US 90

Collection Date/Time: 08/28/2017 14:45

Field ID: G1TLHR0029-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925883	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P331025	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P331238	
		Sulfate	0.20	U	mg SO4/L	P331232	
	SM 2120 B	Color (true)	790		PCU	P331020	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P331108	
	SM 2540 C-97	TDS	162		mg/L	P331276	
	SM 2540 D-97	TSS	2	I	mg/L	P331268	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P331109	
1925885	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P331100	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P331035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P331054	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P331055	
	SM 5310 B-00	Organic Carbon	71		mg C/L	P331190	
1925887	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P331003	
1925897	EPA 200.7 Rev. 4.4	Calcium	2.20		mg/L	P331017	
		Iron	2.46E+03		ug/L	P331017	
		Magnesium	1.18		mg/L	P331017	
		Potassium	0.43	I	mg/L	P331017	
		Sodium	2.5		mg/L	P331017	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P331017	
		Arsenic	0.66		ug/L	P331017	
		Cadmium	0.026	I	ug/L	P331017	
		Chromium	0.72	I	ug/L	P331017	
		Copper	0.59	I	ug/L	P331017	
		Lead	0.77		ug/L	P331017	
		Nickel	1.27		ug/L	P331017	
		Silver	0.010	U	ug/L	P331017	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 08/31/2017.

Sample Location: Little Aucilla River @ US 90

Collection Date/Time: 08/28/2017 14:45

Field ID: G1TLHR0029-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925891	EPA 8321B	Glyphosate**	0.50	U	ug/L	P331094	
		Pyraclostrobin**	0.0020	U	ug/L	P330680	
		Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330883	
		Diuron	8.0E-04	U	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	8.0E-04	U	ug/L	P330883	

Field ID: G1TLHR0029-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925891	USGS O-2060-01	Bentazon	8.0E-04	U	ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	
		MCP	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD
1925893	EPA 8270D	Aldrin	4.2	U	ng/L	P331082	
		Alpha-BHC	2.1	U	ng/L	P331082	
		Beta-BHC	4.2	U	ng/L	P331082	
		Delta-BHC	4.2	U	ng/L	P331082	
		Gamma-BHC	4.2	U	ng/L	P331082	
		Carbophenothion	4.2	U	ng/L	P331082	
		Chlorothalonil	2.1	UJ	ng/L	P331082	CCV, RPD
		Cypermethrin	21	U	ng/L	P331082	
		DDD-p,p'	3.1	U	ng/L	P331082	
		DDE-p,p'	3.1	U	ng/L	P331082	
		DDT-p,p'	3.1	U	ng/L	P331082	
		Dieldrin	4.2	U	ng/L	P331082	
		Endosulfan I	4.2	U	ng/L	P331082	
		Endosulfan II	4.2	U	ng/L	P331082	
		Endosulfan Sulfate	2.1	U	ng/L	P331082	
		Endrin	2.1	U	ng/L	P331082	
		Endrin Aldehyde	2.1	U	ng/L	P331082	
		Heptachlor	1.6	U	ng/L	P331082	
		Heptachlor Epoxide	2.1	U	ng/L	P331082	
		Methoxychlor	4.2	U	ng/L	P331082	
		Mirex	2.1	U	ng/L	P331082	
		Permethrin	10	U	ng/L	P331082	
		Trifluralin	1.0	U	ng/L	P331082	
		Alpha-Chlordane	1.0	U	ng/L	P331082	
		Gamma-Chlordane	1.0	U	ng/L	P331082	
		Endrin Ketone	2.1	U	ng/L	P331082	
		Dicofol	31	UJ	ng/L	P331082	CCV
		Chlordane**	2.6	U	ng/L	P331082	
		Toxaphene**	13	U	ng/L	P331082	
1925895	EPA 8270D	Alachlor	0.24	U	ng/L	P331105	
		Ametryn	0.31	U	ng/L	P331105	
		Atrazine	0.48	I	ng/L	P331105	
		Atrazine Desethyl	1.4	U	ng/L	P331105	
		Azinphos Methyl	2.1	U	ng/L	P331105	
		Bromacil	0.47	U	ng/L	P331105	
		Butylate	0.38	U	ng/L	P331105	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P331105	

Field ID: G1TLHR0029-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925895	EPA 8270D	Chlorpyrifos Methyl	0.095	U	ng/L	P331105	
		Demeton	1.9	U	ng/L	P331105	
		Diazinon	0.12	U	ng/L	P331105	
		Disulfoton	0.47	U	ng/L	P331105	
		EPTC	1.2	UJ	ng/L	P331105	RPD
		Ethion	0.14	U	ng/L	P331105	
		Ethoprop	0.095	U	ng/L	P331105	
		Fenamiphos	0.24	U	ng/L	P331105	MS, RPD
		Fipronil	0.24	U	ng/L	P331105	
		Fipronil Sulfide	0.14	U	ng/L	P331105	
		Fipronil Sulfone	0.14	U	ng/L	P331105	
		Hexazinone	0.47	U	ng/L	P331105	
		Malathion	0.33	U	ng/L	P331105	
		Metribuzin	0.19	UJ	ng/L	P331105	LCS, MS, RPD
		Mevinphos	0.47	U	ng/L	P331105	
		Molinate	0.28	UJ	ng/L	P331105	RPD
		Norflurazon	0.47	UJ	ng/L	P331105	CCV
		Pendimethalin	0.95	U	ng/L	P331105	
		Phorate	0.24	U	ng/L	P331105	
		Prometon	0.85	U	ng/L	P331105	
		Prometryn	0.19	U	ng/L	P331105	
		Simazine	0.47	U	ng/L	P331105	
		Terbufos	0.095	U	ng/L	P331105	
		Terbutylazine	0.40	U	ng/L	P331105	MS
		Fonofos	0.19	U	ng/L	P331105	
		Metaxyl	0.19	U	ng/L	P331105	
		Metolachlor	0.69	I	ng/L	P331105	MS
		Acetochlor	0.24	U	ng/L	P331105	MS
		Cyanazine	0.47	U	ng/L	P331105	
		Parathion Ethyl	0.24	U	ng/L	P331105	MS
		Parathion Methyl	0.24	U	ng/L	P331105	

Ref. Method and Comment:

EPA 8270D: MS accuracy for Heptachlor Epoxide not assessed due to high content of this parameter in the sample spiked. Refer to the narrative for an explanation of QC Codes.

EPA 8270D: Refer to the narrative for an explanation of QC Codes.

Sample Location: Suwannee River @ Ellaville Boat Ramp

Collection Date/Time: 08/28/2017 12:10

Field ID: G1TLHR0035-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925884	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P331025	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P331238	
		Sulfate	14		mg SO4/L	P331232	
	SM 2120 B	Color (true)	550		PCU	P331020	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P331108	
	SM 2540 C-97	TDS	186	A	mg/L	P331276	

Field ID: G1TLHR0035-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925884	SM 2540 D-97	TSS	3	IA	mg/L	P331268	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P331109	
1925886	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P331100	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P331035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P331054	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P331055	
	SM 5310 B-00	Organic Carbon	41		mg C/L	P331190	
1925888	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P331003	
1925898	EPA 200.7 Rev. 4.4	Calcium	27.4		mg/L	P331017	
		Iron	1.10E+03		ug/L	P331017	
		Magnesium	4.66		mg/L	P331017	
		Potassium	1.1	I	mg/L	P331017	
		Sodium	5.2		mg/L	P331017	
		Zinc	5.0	U	ug/L	P331017	
	EPA 200.8 Rev. 5.4	Arsenic	0.98		ug/L	P331017	
		Cadmium	0.035	I	ug/L	P331017	
		Chromium	0.72	I	ug/L	P331017	
		Copper	0.25	I	ug/L	P331017	
		Lead	0.60		ug/L	P331017	
		Nickel	0.64	I	ug/L	P331017	
		Silver	0.010	U	ug/L	P331017	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Suwannee River @ Ellaville Boat Ramp

Collection Date/Time: 08/28/2017 12:10

Field ID: G1TLHR0035-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925892	EPA 8321B	Glyphosate**	0.50	U	ug/L	P331094	
		Pyraclostrobin**	0.0020	U	ug/L	P330680	
		Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330883	
		Diuron	0.0014	I	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	0.0034		ug/L	P330883	
		Bentazon	0.0064		ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	
		MCPD	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD

Field ID: G1TLHR0035-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925894	EPA 8270D	Aldrin	4.2	U	ng/L	P331082	CCV, RPD
		Alpha-BHC	2.1	U	ng/L	P331082	
		Beta-BHC	4.2	U	ng/L	P331082	
		Delta-BHC	4.2	U	ng/L	P331082	
		Gamma-BHC	4.2	U	ng/L	P331082	
		Carbophenothion	4.2	U	ng/L	P331082	
		Chlorothalonil	2.1	UJ	ng/L	P331082	
		Cypermethrin	21	U	ng/L	P331082	
		DDD-p,p'	3.2	U	ng/L	P331082	
		DDE-p,p'	3.2	U	ng/L	P331082	
		DDT-p,p'	3.2	U	ng/L	P331082	
		Dieldrin	4.2	U	ng/L	P331082	
		Endosulfan I	4.2	U	ng/L	P331082	
		Endosulfan II	4.2	U	ng/L	P331082	
		Endosulfan Sulfate	2.1	U	ng/L	P331082	
		Endrin	2.1	U	ng/L	P331082	
		Endrin Aldehyde	2.1	U	ng/L	P331082	
		Heptachlor	1.6	U	ng/L	P331082	
		Heptachlor Epoxide	2.1	U	ng/L	P331082	
		Methoxychlor	4.2	U	ng/L	P331082	
		Mirex	2.1	U	ng/L	P331082	
		Permethrin	11	U	ng/L	P331082	
		Trifluralin	1.1	U	ng/L	P331082	
		Alpha-Chlordane	1.1	U	ng/L	P331082	
		Gamma-Chlordane	1.1	U	ng/L	P331082	
		Endrin Ketone	2.1	U	ng/L	P331082	
		Dicofol	32	UJ	ng/L	P331082	CCV
	EPA 8276	Chlordane**	2.6	U	ng/L	P331082	
		Toxaphene**	13	U	ng/L	P331082	
1925896	EPA 8270D	Alachlor	0.24	U	ng/L	P331105	
		Ametryn	0.31	U	ng/L	P331105	
		Atrazine	1.7		ng/L	P331105	
		Atrazine Desethyl	1.4	U	ng/L	P331105	
		Azinphos Methyl	2.1	U	ng/L	P331105	
		Bromacil	3.2		ng/L	P331105	
		Butylate	0.38	U	ng/L	P331105	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P331105	
		Chlorpyrifos Methyl	0.095	U	ng/L	P331105	
		Demeton	1.9	U	ng/L	P331105	
		Diazinon	0.12	U	ng/L	P331105	
		Disulfoton	0.48	U	ng/L	P331105	
		EPTC	1.2	UJ	ng/L	P331105	RPD
		Ethion	0.14	U	ng/L	P331105	
		Ethoprop	0.095	U	ng/L	P331105	MS, RPD
		Fenamiphos	0.24	U	ng/L	P331105	

Field ID: G1TLHR0035-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925896	EPA 8270D	Fipronil	0.24	U	ng/L	P331105	
		Fipronil Sulfide	0.14	U	ng/L	P331105	
		Fipronil Sulfone	0.14	U	ng/L	P331105	
		Hexazinone	0.64	I	ng/L	P331105	
		Malathion	0.33	U	ng/L	P331105	
		Metribuzin	4.8	J	ng/L	P331105	LCS, MS, RPD
		Mevinphos	0.48	U	ng/L	P331105	
		Molinate	0.29	UJ	ng/L	P331105	RPD
		Norflurazon	0.48	UJ	ng/L	P331105	CCV
		Pendimethalin	0.95	U	ng/L	P331105	
		Phorate	0.24	U	ng/L	P331105	
		Prometon	0.86	U	ng/L	P331105	
		Prometryn	0.19	U	ng/L	P331105	
		Simazine	0.82	I	ng/L	P331105	
		Terbufos	0.095	U	ng/L	P331105	
		Terbutylazine	0.41	U	ng/L	P331105	MS
		Fonofos	0.19	U	ng/L	P331105	
		Metalaxyl	0.66	I	ng/L	P331105	
		Metolachlor	5.6		ng/L	P331105	MS
		Acetochlor	0.24	U	ng/L	P331105	MS
		Cyanazine	0.48	U	ng/L	P331105	
		Parathion Ethyl	0.24	U	ng/L	P331105	MS
		Parathion Methyl	0.24	U	ng/L	P331105	

Ref. Method and Comment:

EPA 8270D: MS accuracy for Heptachlor Epoxide not assessed due to high content of this parameter in the sample spiked. Refer to the narrative for an explanation of QC Codes.

EPA 8270D: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P331025

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P331017

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P331017

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331232

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331238

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331100

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331035

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331054

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331055

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331003

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P331082

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'	3.0	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
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: P331105

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	0.50	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270D
Batch ID: P331105

Component	Result	Code	Units
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	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8276
Batch ID: P331082

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

Reference Method: EPA 8321B
Batch ID: P330680

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P330900

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P331094

Component	Result	Code	Units
Glyphosate	0.50	U	ug/L

Reference Method: SM 2120 B
Batch ID: P331020

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P331108

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
 Batch ID: P331276

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P331268

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P331109

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P331190

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

Reference Method: USGS O-2060-01
 Batch ID: P330883

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P331017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P331017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P331017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	106		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	99.7		P	85 - 115
Copper	99.8		P	85 - 115
Lead	100		P	85 - 115
Nickel	103		P	85 - 115
Silver	108		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331232

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331238

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	105		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P331055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P331003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.7		P	90 - 110

Reference Method: EPA 8270D

Batch ID: P331082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	33.2	33.2	P/P	26 - 88.0
Alpha-BHC	65.1	78.1	P/P	63 - 114
Alpha-Chlordane	67.4	77.7	P/P	56 - 117
Beta-BHC	79.8	92.8	P/P	57 - 138
Carbophenothion	55.2	65.2	P/P	36 - 148
Chlorothalonil	81.4	59.8	P/P	26 - 173
Cypermethrin	72.2	66.1	P/P	42 - 159
DDD-p,p'	71.0	81.9	P/P	62 - 126
DDE-p,p'	66.6	73.2	P/P	53 - 115
DDT-p,p'	80.1	78.9	P/P	54 - 117
Delta-BHC	94.2	99.6	P/P	68 - 158
Dicofol	49.5	57.3	P/P	25 - 114
Dieldrin	70.5	80.8	P/P	59 - 126
Endosulfan I	71.8	85.0	P/P	62 - 138
Endosulfan II	75.5	82.5	P/P	61 - 150
Endosulfan Sulfate	86.7	83.9	P/P	63 - 132
Endrin	68.6	83.2	P/P	49 - 148
Endrin Aldehyde	74.8	81.7	P/P	50 - 144
Endrin Ketone	85.4	83.5	P/P	66 - 122
Gamma-BHC	70.9	78.8	P/P	60 - 137
Gamma-Chlordane	78.8	76.0	P/P	54 - 113
Heptachlor	69.8	66.2	P/P	43 - 104
Heptachlor Epoxide	81.5	79.7	P/P	64 - 118
Methoxychlor	92.9	89.9	P/P	63 - 129
Mirex	68.0	66.8	P/P	39 - 93.0
Permethrin	76.3	71.4	P/P	51 - 123
Trifluralin	118	102	P/P	35 - 187

Reference Method: EPA 8270D

Batch ID: P331105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	85.7	101	P/P	78 - 118
Alachlor	85.3	99.1	P/P	77 - 119
Ametryn	84.0	91.5	P/P	61 - 136
Atrazine	81.0	93.6	P/P	73 - 120
Atrazine Desethyl	95.9	73.0	P/P	16 - 122
Azinphos Methyl	120	124	P/P	69 - 186
Bromacil	74.4	75.4	P/P	40 - 125
Butylate	56.4	73.0	P/P	32 - 87.0

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P331105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorpyrifos Ethyl	83.7	88.6	P/P	53 - 110
Chlorpyrifos Methyl	90.2	88.8	P/P	31 - 119
Cyanazine	133	107	P/P	36 - 224
Demeton	90.8	97.1	P/P	39 - 122
Diazinon	84.1	101	P/P	75 - 119
Disulfoton	96.3	102	P/P	42 - 139
EPTC	47.8	66.4	P/P	33 - 96.0
Ethion	80.6	81.8	P/P	63 - 127
Ethoprop	77.8	84.7	P/P	65 - 107
Fenamiphos	90.7	93.3	P/P	64 - 137
Fipronil	86.4	90.4	P/P	60 - 126
Fipronil Sulfide	81.9	77.2	P/P	58 - 124
Fipronil Sulfone	70.7	73.2	P/P	57 - 126
Fonofos	85.5	85.1	P/P	65 - 111
Hexazinone	86.4	94.1	P/P	46 - 151
Malathion	89.8	95.6	P/P	68 - 132
Metaxyl	78.5	95.0	P/P	51 - 132
Metolachlor	78.1	96.5	P/P	78 - 119
Metribuzin	196	111	F/P	58 - 148
Mevinphos	79.1	84.5	P/P	34 - 128
Molinate	53.1	77.6	P/P	44 - 101
Norflurazon	71.5	93.3	P/P	63 - 129
Parathion Ethyl	84.4	87.7	P/P	80 - 109
Parathion Methyl	101	94.6	P/P	74 - 125
Pendimethalin	76.6	84.1	P/P	48 - 134
Phorate	86.3	83.6	P/P	52 - 119
Prometon	81.9	97.7	P/P	69 - 124
Prometryn	81.9	94.3	P/P	66 - 124
Simazine	95.6	114	P/P	61 - 134
Terbufos	87.7	89.7	P/P	58 - 115
Terbutylazine	83.9	91.9	P/P	77 - 113

Reference Method: EPA 8276
Batch ID: P331082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	106	101	P/P	48 - 121
Toxaphene	116	107	P/P	43 - 135

Reference Method: EPA 8321B
Batch ID: P330680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	119		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P330900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	42.2		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P331094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	94.4		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P331108

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

Reference Method: SM 4500 F-C-97
 Batch ID: P331109

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.1		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P331190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P330883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Acetaminophen	142		P	30 - 150
Bentazon	62.2		P	40 - 150
Carbamazepine	132		P	40 - 150
Diuron	108		P	40 - 150
Fenuron	123		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	104		P	40 - 160
Linuron	92.2		P	40 - 150
MCPP	121		P	40 - 150
Primidone	133		P	40 - 150
Triclopyr	111		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P331017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925897	Calcium	110		P	80 - 120
1925897	Iron	110		P	80 - 120
1925897	Magnesium	110		P	80 - 120
1925897	Potassium	105		P	80 - 120
1925897	Sodium	107		P	80 - 120
1925897	Zinc	104		P	80 - 120
1926055	Iron	105	106	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P331017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926055	Magnesium	105		P	80 - 120
1926055	Potassium	102	103	P/P	80 - 120
1926055	Sodium	102		P	80 - 120
1926055	Zinc	99.4	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P331017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925897	Arsenic	106		P	80 - 120
1925897	Cadmium	105		P	80 - 120
1925897	Chromium	100		P	80 - 120
1925897	Copper	99.4		P	80 - 120
1925897	Lead	101		P	80 - 120
1925897	Nickel	103		P	80 - 120
1925897	Silver	107		P	80 - 120
1926055	Arsenic	112	113	P/P	80 - 120
1926055	Cadmium	104	104	P/P	80 - 120
1926055	Chromium	99.3	99.4	P/P	80 - 120
1926055	Copper	99.7	99.9	P/P	80 - 120
1926055	Lead	105	105	P/P	80 - 120
1926055	Nickel	101	101	P/P	80 - 120
1926055	Silver	107	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P331232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925903	Sulfate	100		P	90 - 110
1926043	Sulfate	95.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P331238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925903	Chloride	106		P	90 - 110
1926043	Chloride	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P331035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924632	Kjeldahl Nitrogen	99.9	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P331054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925885	NO2NO3-N	99.5	98.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925910	Total-P	98.2	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925911	O-Phosphate-P	95.8	97.9	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P331082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924834	Aldrin	37.3	36.6	P/P	22 - 97.0
1924834	Alpha-BHC	85.6	78.6	P/P	43 - 132
1924834	Alpha-Chlordane	83.0	78.6	P/P	36 - 126
1924834	Beta-BHC	86.0	94.7	P/P	41 - 150
1924834	Carbophenothion	70.9	68.6	P/P	13 - 196
1924834	Chlorothalonil	70.2	64.0	P/P	10 - 266
1924834	Cypermethrin	77.7	68.0	P/P	37 - 161
1924834	DDD-p,p'	83.5	81.8	P/P	44 - 131
1924834	DDE-p,p'	83.9	72.4	P/P	32 - 127
1924834	DDT-p,p'	86.2	79.3	P/P	45 - 116
1924834	Delta-BHC	86.3	101	P/P	50 - 201
1924834	Dicofol	60.1	53.3	P/P	10 - 100
1924834	Dieldrin	95.1	88.1	P/P	39 - 142
1924834	Endosulfan I	88.6	81.6	P/P	51 - 139
1924834	Endosulfan II	90.1	84.9	P/P	49 - 155
1924834	Endosulfan Sulfate	84.5	76.8	P/P	54 - 136
1924834	Endrin	79.8	82.5	P/P	38 - 141
1924834	Endrin Aldehyde	89.3	80.6	P/P	14 - 152
1924834	Endrin Ketone	89.3	78.9	P/P	60 - 128
1924834	Gamma-BHC	79.1	84.2	P/P	48 - 157
1924834	Gamma-Chlordane	81.6	77.3	P/P	35 - 123
1924834	Heptachlor	76.9	70.9	P/P	25 - 112
1924834	Methoxychlor	96.0	88.4	P/P	52 - 127
1924834	Mirex	74.6	68.5	P/P	25 - 108
1924834	Permethrin	81.8	72.6	P/P	46 - 133
1924834	Trifluralin	127	116	P/P	29 - 254

Reference Method: EPA 8270D
Batch ID: P331105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926042	Acetochlor	68.9	66.9	F/F	74 - 123
1926042	Alachlor	73.5	73.8	P/P	73 - 124
1926042	Ametryn	75.1	73.1	P/P	56 - 149
1926042	Atrazine	88.4	90.0	P/P	73 - 124
1926042	Atrazine Desethyl	78.6	77.9	P/P	12 - 103
1926042	Azinphos Methyl	126	110	P/P	60 - 202
1926042	Bromacil	58.0	66.3	P/P	42 - 133
1926042	Butylate	44.5	40.6	P/P	10 - 85.0
1926042	Chlorpyrifos Ethyl	65.7	70.0	P/P	53 - 113

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
 Batch ID: P331105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926042	Chlorpyrifos Methyl	78.6	75.7	P/P	40 - 115
1926042	Cyanazine	141	150	P/P	22 - 210
1926042	Demeton	89.7	91.5	P/P	17 - 149
1926042	Diazinon	89.2	77.3	P/P	72 - 124
1926042	Disulfoton	104	96.4	P/P	43 - 139
1926042	EPTC	38.8	29.6	P/P	10 - 86.0
1926042	Ethion	91.8	75.4	P/P	65 - 131
1926042	Ethoprop	83.8	75.7	P/P	59 - 110
1926042	Fenamiphos	103	56.6	P/F	57 - 138
1926042	Fipronil	86.8	81.5	P/P	40 - 130
1926042	Fipronil Sulfide	76.7	70.9	P/P	36 - 128
1926042	Fipronil Sulfone	62.8	64.7	P/P	16 - 145
1926042	Fonofos	82.6	74.2	P/P	60 - 112
1926042	Hexazinone	89.6	85.7	P/P	69 - 142
1926042	Malathion	87.0	82.1	P/P	68 - 132
1926042	Metalaxyl	74.2	78.3	P/P	66 - 118
1926042	Metolachlor	57.0	68.4	F/F	71 - 124
1926042	Metribuzin	249	260	F/F	61 - 140
1926042	Mevinphos	87.7	81.5	P/P	38 - 130
1926042	Molinate	50.5	40.8	P/P	23 - 99.0
1926042	Norflurazon	87.9	84.6	P/P	39 - 139
1926042	Parathion Ethyl	80.0	73.2	P/F	75 - 111
1926042	Parathion Methyl	107	86.2	P/P	64 - 130
1926042	Pendimethalin	81.5	67.3	P/P	26 - 173
1926042	Phorate	73.3	72.6	P/P	43 - 127
1926042	Prometon	77.1	69.3	P/P	50 - 144
1926042	Prometryn	77.6	79.7	P/P	69 - 126
1926042	Simazine	107	109	P/P	51 - 152
1926042	Terbufos	90.6	83.1	P/P	54 - 125
1926042	Terbuthylazine	76.0	73.5	P/F	76 - 113

Reference Method: EPA 8276
 Batch ID: P331082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924636	Chlordane	112	114	P/P	44 - 134
1924636	Toxaphene	129	130	P/P	36 - 147

Reference Method: EPA 8321B
 Batch ID: P330680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923412	Pyraclostrobin	120	115	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P330900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924465	Sucralose	36.4	28.4	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P331094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1925891	Glyphosate	91.5	92.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P331109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924584	Fluoride	96.7	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P331190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924475	Organic Carbon	103	102	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P330883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924466	2,4-D	102	100	P/P	40 - 150
1924466	Acetaminophen	136	140	P/P	30 - 150
1924466	Bentazon	12.4	13.4	F/F	40 - 150
1924466	Carbamazepine	79.0	88.4	P/P	40 - 150
1924466	Diuron	44.5	48.1	P/P	40 - 150
1924466	Fenuron	40.2	38.6	P/F	40 - 150
1924466	Fluridone	20.6	32.6	F/F	40 - 150
1924466	Imidacloprid	130	146	P/P	40 - 160
1924466	Linuron	58.7	65.4	P/P	40 - 150
1924466	MCPP	128	134	P/P	40 - 150
1924466	Primidone	54.8	65.7	P/P	40 - 150
1924466	Triclopyr	104	118	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926108	Turbidity	3.54	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P331017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926055	Calcium	0.612	Spike	P	0 - 20
1926055	Iron	0.730	Spike	P	0 - 20
1926055	Magnesium	0.283	Spike	P	0 - 20
1926055	Potassium	0.302	Spike	P	0 - 20
1926055	Sodium	0.0891	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P331017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926055	Zinc	2.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P331017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926055	Arsenic	0.445	Spike	P	0 - 20
1926055	Cadmium	0.745	Spike	P	0 - 20
1926055	Chromium	0.143	Spike	P	0 - 20
1926055	Copper	0.254	Spike	P	0 - 20
1926055	Lead	0.0370	Spike	P	0 - 20
1926055	Nickel	0.105	Spike	P	0 - 20
1926055	Silver	0.379	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925903	Sulfate	4.84	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925903	Chloride	5.88	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924452	Ammonia-N	0.647	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924632	Kjeldahl Nitrogen	3.10	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925885	NO2NO3-N	1.01	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P331055

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925910	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P331003

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925911	O-Phosphate-P	2.17	Spike	P	0 - 20

Reference Method: EPA 8270D

Batch ID: P331082

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924834	Aldrin	2.03	Spike	P	0 - 30
1924834	Alpha-BHC	8.55	Spike	P	0 - 30
1924834	Alpha-Chlordane	4.84	Spike	P	0 - 30
1924834	Beta-BHC	9.65	Spike	P	0 - 30
1924834	Carbophenothion	3.31	Spike	P	0 - 30
1924834	Chlorothalonil	9.16	Spike	P	0 - 30
1924834	Cypermethrin	13.3	Spike	P	0 - 30
1924834	DDD-p,p'	2.14	Spike	P	0 - 30
1924834	DDE-p,p'	14.8	Spike	P	0 - 30
1924834	DDT-p,p'	8.35	Spike	P	0 - 30
1924834	Delta-BHC	15.6	Spike	P	0 - 30
1924834	Dicofol	11.9	Spike	P	0 - 30
1924834	Dieldrin	1.91	Spike	P	0 - 30
1924834	Endosulfan I	8.18	Spike	P	0 - 30
1924834	Endosulfan II	5.93	Spike	P	0 - 30
1924834	Endosulfan Sulfate	9.48	Spike	P	0 - 30
1924834	Endrin	3.36	Spike	P	0 - 30
1924834	Endrin Aldehyde	10.2	Spike	P	0 - 30
1924834	Endrin Ketone	9.32	Spike	P	0 - 30
1924834	Gamma-BHC	6.30	Spike	P	0 - 30
1924834	Gamma-Chlordane	4.82	Spike	P	0 - 30
1924834	Heptachlor	8.09	Spike	P	0 - 30
1924834	Heptachlor Epoxide	0.864	Spike	P	0 - 30
1924834	Methoxychlor	8.21	Spike	P	0 - 30
1924834	Mirex	8.54	Spike	P	0 - 30
1924834	Permethrin	12.0	Spike	P	0 - 30
1924834	Trifluralin	8.79	Spike	P	0 - 30
LFB	Aldrin	0.203	LCS	P	0 - 30
LFB	Alpha-BHC	18.2	LCS	P	0 - 30
LFB	Alpha-Chlordane	14.2	LCS	P	0 - 30
LFB	Beta-BHC	15.1	LCS	P	0 - 30
LFB	Carbophenothion	16.6	LCS	P	0 - 30
LFB	Chlorothalonil	30.6	LCS	F	0 - 30
LFB	Cypermethrin	8.81	LCS	P	0 - 30
LFB	DDD-p,p'	14.3	LCS	P	0 - 30
LFB	DDE-p,p'	9.43	LCS	P	0 - 30
LFB	DDT-p,p'	1.53	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P331082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Delta-BHC	5.60	LCS	P	0 - 30
LFB	Dicofol	14.7	LCS	P	0 - 30
LFB	Dieldrin	13.7	LCS	P	0 - 30
LFB	Endosulfan I	16.8	LCS	P	0 - 30
LFB	Endosulfan II	8.83	LCS	P	0 - 30
LFB	Endosulfan Sulfate	3.30	LCS	P	0 - 30
LFB	Endrin	19.3	LCS	P	0 - 30
LFB	Endrin Aldehyde	8.79	LCS	P	0 - 30
LFB	Endrin Ketone	2.19	LCS	P	0 - 30
LFB	Gamma-BHC	10.6	LCS	P	0 - 30
LFB	Gamma-Chlordane	3.60	LCS	P	0 - 30
LFB	Heptachlor	5.29	LCS	P	0 - 30
LFB	Heptachlor Epoxide	2.23	LCS	P	0 - 30
LFB	Methoxychlor	3.35	LCS	P	0 - 30
LFB	Mirex	1.76	LCS	P	0 - 30
LFB	Permethrin	6.53	LCS	P	0 - 30
LFB	Trifluralin	14.7	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P331105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926042	Acetochlor	2.88	Spike	P	0 - 30
1926042	Alachlor	0.404	Spike	P	0 - 30
1926042	Ametryn	2.71	Spike	P	0 - 30
1926042	Atrazine	1.64	Spike	P	0 - 30
1926042	Atrazine Desethyl	0.839	Spike	P	0 - 30
1926042	Azinphos Methyl	14.1	Spike	P	0 - 30
1926042	Bromacil	6.92	Spike	P	0 - 30
1926042	Butylate	9.27	Spike	P	0 - 30
1926042	Chlorpyrifos Ethyl	6.37	Spike	P	0 - 30
1926042	Chlorpyrifos Methyl	3.73	Spike	P	0 - 30
1926042	Cyanazine	6.42	Spike	P	0 - 30
1926042	Demeton	1.98	Spike	P	0 - 30
1926042	Diazinon	14.2	Spike	P	0 - 30
1926042	Disulfoton	7.85	Spike	P	0 - 30
1926042	EPTC	27.0	Spike	P	0 - 30
1926042	Ethion	19.6	Spike	P	0 - 30
1926042	Ethoprop	10.2	Spike	P	0 - 30
1926042	Fenamiphos	58.6	Spike	F	0 - 30
1926042	Fipronil	6.19	Spike	P	0 - 30
1926042	Fipronil Sulfide	7.90	Spike	P	0 - 30
1926042	Fipronil Sulfone	2.93	Spike	P	0 - 30
1926042	Fonofos	10.7	Spike	P	0 - 30
1926042	Hexazinone	3.49	Spike	P	0 - 30
1926042	Malathion	5.75	Spike	P	0 - 30
1926042	Metaxyl	4.87	Spike	P	0 - 30
1926042	Metolachlor	17.3	Spike	P	0 - 30
1926042	Metribuzin	4.42	Spike	P	0 - 30
1926042	Mevinphos	7.24	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P331105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926042	Molinate	21.2	Spike	P	0 - 30
1926042	Norflurazon	3.83	Spike	P	0 - 30
1926042	Parathion Ethyl	8.82	Spike	P	0 - 30
1926042	Parathion Methyl	21.9	Spike	P	0 - 30
1926042	Pendimethalin	19.1	Spike	P	0 - 30
1926042	Phorate	1.03	Spike	P	0 - 30
1926042	Prometon	10.7	Spike	P	0 - 30
1926042	Prometryn	2.71	Spike	P	0 - 30
1926042	Simazine	1.88	Spike	P	0 - 30
1926042	Terbufos	8.64	Spike	P	0 - 30
1926042	Terbutylazine	3.45	Spike	P	0 - 30
LFB	Acetochlor	16.4	LCS	P	0 - 30
LFB	Alachlor	15.0	LCS	P	0 - 30
LFB	Ametryn	8.48	LCS	P	0 - 30
LFB	Atrazine	14.4	LCS	P	0 - 30
LFB	Atrazine Desethyl	27.1	LCS	P	0 - 30
LFB	Azinphos Methyl	2.74	LCS	P	0 - 30
LFB	Bromacil	1.23	LCS	P	0 - 30
LFB	Butylate	25.6	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	5.74	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	1.55	LCS	P	0 - 30
LFB	Cyanazine	21.6	LCS	P	0 - 30
LFB	Demeton	6.66	LCS	P	0 - 30
LFB	Diazinon	18.5	LCS	P	0 - 30
LFB	Disulfoton	5.63	LCS	P	0 - 30
LFB	EPTC	32.6	LCS	F	0 - 30
LFB	Ethion	1.47	LCS	P	0 - 30
LFB	Ethoprop	8.48	LCS	P	0 - 30
LFB	Fenamiphos	2.86	LCS	P	0 - 30
LFB	Fipronil	4.46	LCS	P	0 - 30
LFB	Fipronil Sulfide	5.89	LCS	P	0 - 30
LFB	Fipronil Sulfone	3.47	LCS	P	0 - 30
LFB	Fonofos	0.481	LCS	P	0 - 30
LFB	Hexazinone	8.51	LCS	P	0 - 30
LFB	Malathion	6.29	LCS	P	0 - 30
LFB	Metalaxyl	19.0	LCS	P	0 - 30
LFB	Metolachlor	21.1	LCS	P	0 - 30
LFB	Metribuzin	54.9	LCS	F	0 - 30
LFB	Mevinphos	6.58	LCS	P	0 - 30
LFB	Molinate	37.5	LCS	F	0 - 30
LFB	Norflurazon	26.5	LCS	P	0 - 30
LFB	Parathion Ethyl	3.93	LCS	P	0 - 30
LFB	Parathion Methyl	6.08	LCS	P	0 - 30
LFB	Pendimethalin	9.34	LCS	P	0 - 30
LFB	Phorate	3.17	LCS	P	0 - 30
LFB	Prometon	17.6	LCS	P	0 - 30
LFB	Prometryn	14.0	LCS	P	0 - 30
LFB	Simazine	17.4	LCS	P	0 - 30
LFB	Terbufos	2.31	LCS	P	0 - 30
LFB	Terbutylazine	9.07	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P331082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924636	Chlordane	1.22	Spike	P	0 - 30
1924636	Toxaphene	0.0208	Spike	P	0 - 30
LFB	Chlordane	4.80	LCS	P	0 - 30
LFB	Toxaphene	7.85	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P330680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923412	Pyraclostrobin	4.19	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P330900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924465	Sucralose	10.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P331094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925891	Glyphosate	1.22	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P331020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925909	Color (true)	1.54	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P331108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924584	Total Alkalinity	0.457	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P331276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1925884	TDS	3.23	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P331109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924584	Fluoride	0.996	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P331190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924475	Organic Carbon	0.860	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P330883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924466	2,4-D	1.78	Spike	P	0 - 30
1924466	Acetaminophen	2.62	Spike	P	0 - 30
1924466	Bentazon	7.76	Spike	P	0 - 30
1924466	Carbamazepine	11.3	Spike	P	0 - 30
1924466	Diuron	7.69	Spike	P	0 - 30
1924466	Fenuron	4.01	Spike	P	0 - 30
1924466	Fluridone	45.0	Spike	F	0 - 30
1924466	Imidacloprid	11.7	Spike	P	0 - 30
1924466	Linuron	10.7	Spike	P	0 - 30
1924466	MCPP	4.67	Spike	P	0 - 30
1924466	Primidone	18.0	Spike	P	0 - 30
1924466	Triclopyr	12.3	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: 1925891
Field Sample ID: G1TLHR0029-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.7	P	30 - 160
EPA 8321B	Diuron-d6	111	P	30 - 160
EPA 8321B	Diuron-d6	43.7	P	30 - 160
EPA 8321B	Diuron-d6	111	P	30 - 160
EPA 8321B	Diuron-d6	43.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.6	P	40 - 160
EPA 8321B	Primidone-d5	50.7	P	30 - 160
EPA 8321B	Primidone-d5	50.7	P	30 - 160
EPA 8321B	Sucralose-d6	41.9	P	40 - 160
EPA 8321B	Sucralose-d6	41.9	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1925891

Field Sample ID: G1TLHR0029-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	2,4-D-d3	95.1	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	132	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	67.7	P	30 - 160
USGS O-2060-01	Diuron-d6	111	P	30 - 160
USGS O-2060-01	Diuron-d6	43.7	P	30 - 160
USGS O-2060-01	Primidone-d5	50.7	P	30 - 160
USGS O-2060-01	Sucralose-d6	41.9	P	40 - 160

Lab Sample ID: 1925892

Field Sample ID: G1TLHR0035-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	97.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.8	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Diuron-d6	53.0	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Diuron-d6	53.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.9	P	40 - 160
EPA 8321B	Primidone-d5	65.4	P	30 - 160
EPA 8321B	Primidone-d5	65.4	P	30 - 160
EPA 8321B	Sucralose-d6	50.0	P	40 - 160
EPA 8321B	Sucralose-d6	50.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	118	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	97.9	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	83.8	P	30 - 160
USGS O-2060-01	Diuron-d6	105	P	30 - 160
USGS O-2060-01	Diuron-d6	53.0	P	30 - 160
USGS O-2060-01	Primidone-d5	65.4	P	30 - 160
USGS O-2060-01	Sucralose-d6	50.0	P	40 - 160

Lab Sample ID: 1925893

Field Sample ID: G1TLHR0029-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	56.5	P	39 - 118
EPA 8270D	Tetrachloro-m-xylene	40.6	P	32 - 103
EPA 8276	Decachlorobiphenyl	66.2	P	31 - 100

Lab Sample ID: 1925894

Field Sample ID: G1TLHR0035-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	48.6	P	39 - 118
EPA 8270D	Tetrachloro-m-xylene	38.2	P	32 - 103
EPA 8276	Decachlorobiphenyl	61.5	P	31 - 100

Quality Assurance Report Surrogates

Lab Sample ID: 1925895

Field Sample ID: G1TLHR0029-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	74.7	P	53 - 135
EPA 8270D	Simazine-d10	88.8	P	71 - 126

Lab Sample ID: 1925896

Field Sample ID: G1TLHR0035-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	71.3	P	53 - 135
EPA 8270D	Simazine-d10	94.7	P	71 - 126

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A78683

Included Lab Sample IDs: 1925887, 1925888

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.4	P/P	90 - 110
O-Phosphate-P	98.7	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A78689

Included Lab Sample IDs: 1925883, 1925884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A78690

Included Lab Sample IDs: 1925883, 1925884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A78700

Included Lab Sample IDs: 1925891, 1925892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	113	114	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78701

Included Lab Sample IDs: 1925885, 1925886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A78716

Included Lab Sample IDs: 1925897, 1925898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	104	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Cadmium	99.3	101	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Chromium	99.0	101	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Lead	100	102	P/P	90 - 110
Lead	99.5	100	P/P	90 - 110
Nickel	101	102	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Silver	98.0	99.6	P/P	90 - 110
Silver	99.6	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A78718

Included Lab Sample IDs: 1925897, 1925898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.2	99.5	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.8	99.1	P/P	90 - 110
Sodium	99.3	99.3	P/P	90 - 110
Zinc	98.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78720

Included Lab Sample IDs: 1925885, 1925886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A78722

Included Lab Sample IDs: 1925883, 1925884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A78722

Included Lab Sample IDs: 1925883, 1925884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.0	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78726

Included Lab Sample IDs: 1925886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78728

Included Lab Sample IDs: 1925885, 1925886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A78731

Included Lab Sample IDs: 1925891, 1925892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	97.3	95.1	P/P	70 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78733

Included Lab Sample IDs: 1925885

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

Reference Method: SM 5310 B-00

Run ID: A78746

Included Lab Sample IDs: 1925885, 1925886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	108	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A78765

Included Lab Sample IDs: 1925891, 1925892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	126	121	P/P	50 - 150
Acetaminophen	110	103	P/P	60 - 150
Bentazon	82.7	82.6	P/P	50 - 150
MCP	145	136	P/P	50 - 150
Triclopyr	138	144	P/P	50 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A78767

Included Lab Sample IDs: 1925883, 1925884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	108	P/P	90 - 110
Sulfate	101	109	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A787749

Included Lab Sample IDs: 1925891, 1925892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	128	127	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A78805

Included Lab Sample IDs: 1925891, 1925892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	127	119	P/P	60 - 150
Diuron	109	105	P/P	60 - 150
Fenuron	93.9	96.4	P/P	60 - 150
Fluridone	101	98.4	P/P	60 - 160
Imidacloprid	110	105	P/P	60 - 150
Linuron	89.7	98.7	P/P	60 - 150
Primidone	126	106	P/P	60 - 150

Reference Method: EPA 8270D

Run ID: A78842

Included Lab Sample IDs: 1925893, 1925894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	100		P	80 - 120
Alpha-BHC	89.6		P	80 - 120
Alpha-Chlordane	99.0		P	80 - 120
Beta-BHC	89.6		P	80 - 120
Carbophenothion	95.8		P	80 - 120
Chlorothalonil	78.4*		F	80 - 120
Cypermethrin	88.4		P	80 - 120
DDD-p,p'	98.2		P	80 - 120
DDE-p,p'	105		P	80 - 120
DDT-p,p'	106		P	80 - 120
Delta-BHC	86.1		P	80 - 120
Dicofol	149*		F	80 - 120
Dieldrin	99.2		P	80 - 120
Endosulfan I	95.5		P	80 - 120
Endosulfan II	88.2		P	80 - 120
Endosulfan Sulfate	94.5		P	80 - 120
Endrin	100		P	80 - 120
Endrin Aldehyde	96.1		P	80 - 120
Endrin Ketone	96.6		P	80 - 120
Gamma-BHC	94.0		P	80 - 120
Gamma-Chlordane	98.7		P	80 - 120
Heptachlor	94.2		P	80 - 120
Heptachlor Epoxide	99.4		P	80 - 120
Methoxychlor	103		P	80 - 120
Mirex	99.9		P	80 - 120
Permethrin	94.9		P	80 - 120
Trifluralin	103		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A78846

Included Lab Sample IDs: 1925893, 1925894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	103		P	80 - 120
Toxaphene	113		P	80 - 120

Reference Method: EPA 8270D

Run ID: A78963

Included Lab Sample IDs: 1925895, 1925896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	96.6		P	80 - 120
Alachlor	96.2		P	80 - 120
Ametryn	89.0		P	80 - 120
Atrazine	90.3		P	80 - 120
Atrazine Desethyl	93.3		P	80 - 120
Azinphos Methyl	113		P	80 - 120
Bromacil	87.5		P	80 - 120
Butylate	102		P	80 - 120
Chlorpyrifos Ethyl	93.5		P	80 - 120
Chlorpyrifos Methyl	99.5		P	80 - 120
Cyanazine	82.4		P	80 - 120
Demeton	95.0		P	80 - 120
Diazinon	91.7		P	80 - 120
Disulfoton	93.7		P	80 - 120
EPTC	92.6		P	80 - 120
Ethion	86.8		P	80 - 120
Ethoprop	98.3		P	80 - 120
Fenamiphos	88.4		P	80 - 120
Fipronil	82.9		P	80 - 120
Fipronil Sulfide	88.8		P	80 - 120
Fipronil Sulfone	87.1		P	80 - 120
Fonofos	96.0		P	80 - 120
Hexazinone	96.8		P	80 - 120
Malathion	88.9		P	80 - 120
Metalaxyl	92.4		P	80 - 120
Metolachlor	94.2		P	80 - 120
Metribuzin	100		P	80 - 120
Mevinphos	95.6		P	80 - 120
Molinate	93.6		P	80 - 120
Norflurazon	79.6*		F	80 - 120
Parathion Ethyl	89.0		P	80 - 120
Parathion Methyl	99.3		P	80 - 120
Pendimethalin	84.3		P	80 - 120
Phorate	96.4		P	80 - 120
Prometon	99.0		P	80 - 120
Prometryn	92.6		P	80 - 120
Simazine	92.1		P	80 - 120
Terbufos	96.3		P	80 - 120
Terbuthylazine	93.2		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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.54	
EPA 200.7 Rev. 4.4	Calcium	103		110					0.612
	Iron	106		110	105	106			0.730
	Magnesium	103		110	105				0.283
	Potassium	101		105	102	103			0.302
	Sodium	103		107	102				0.0891
	Zinc	101		104	99.4	102			2.17
EPA 200.8 Rev. 5.4	Arsenic	106		106	112	113			0.445
	Cadmium	99.9		105	104	104			0.745
	Chromium	99.7		100	99.3	99.4			0.143
	Copper	99.8		99.4	99.7	99.9			0.254
	Lead	100		101	105	105			0.0370
	Nickel	103		103	101	101			0.105
	Silver	108		107	107	108			0.379
EPA 300.0 Rev. 2.1	Chloride	100		106	102			5.88	
	Sulfate	96.6		100	95.7			4.84	
EPA 350.1 Rev. 2.0	Ammonia-N	105							0.647
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		99.9	104				3.10
EPA 353.2 Rev. 2.0	NO2NO3-N	106		99.5	98.5				1.01
EPA 365.1 Rev. 2.0	Total-P	97.7		98.2	96.9				1.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7		95.8	97.9				2.17
EPA 8270D	Acetochlor	85.7	101	68.9	66.9		16.4		2.88
	Alachlor	85.3	99.1	73.5	73.8		15.0		0.404
	Aldrin	33.2	33.2	37.3	36.6		0.203		2.03
	Alpha-BHC	65.1	78.1	78.6	85.6		18.2		8.55
	Alpha-Chlordane	67.4	77.7	78.6	83.0		14.2		4.84
	Ametryn	84.0	91.5	75.1	73.1		8.48		2.71
	Atrazine	81.0	93.6	88.4	90.0		14.4		1.64
	Atrazine Desethyl	95.9	73.0	78.6	77.9		27.1		0.839
	Azinphos Methyl	120	124	126	110		2.74		14.1
	Beta-BHC	79.8	92.8	94.7	86.0		15.1		9.65
	Bromacil	74.4	75.4	58.0	66.3		1.23		6.92
	Butylate	56.4	73.0	44.5	40.6		25.6		9.27
	Carbophenothion	55.2	65.2	68.6	70.9		16.6		3.31
	Chlorothalonil	81.4	59.8	64.0	70.2		30.6		9.16
	Chlorpyrifos Ethyl	83.7	88.6	65.7	70.0		5.74		6.37
	Chlorpyrifos Methyl	90.2	88.8	78.6	75.7		1.55		3.73
	Cyanazine	133	107	141	150		21.6		6.42
	Cypermethrin	72.2	66.1	68.0	77.7		8.81		13.3
	DDD-p,p'	71.0	81.9	81.8	83.5		14.3		2.14
	DDE-p,p'	66.6	73.2	83.9	72.4		9.43		14.8
	DDT-p,p'	80.1	78.9	86.2	79.3		1.53		8.35
	Delta-BHC	94.2	99.6	101	86.3		5.60		15.6
	Demeton	90.8	97.1	89.7	91.5		6.66		1.98
	Diazinon	84.1	101	89.2	77.3		18.5		14.2
	Dicofol	49.5	57.3	53.3	60.1		14.7		11.9
	Dieldrin	70.5	80.8	95.1	88.1		13.7		1.91
	Disulfoton	96.3	102	104	96.4		5.63		7.85
	Endosulfan I	71.8	85.0	88.6	81.6		16.8		8.18
	Endosulfan II	75.5	82.5	90.1	84.9		8.83		5.93
	Endosulfan Sulfate	86.7	83.9	84.5	76.8		3.30		9.48
	Endrin	68.6	83.2	82.5	79.8		19.3		3.36
	Endrin Aldehyde	74.8	81.7	80.6	89.3		8.79		10.2
	Endrin Ketone	85.4	83.5	78.9	89.3		2.19		9.32

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	EPTC	47.8	66.4	38.8	29.6	32.6	27.0
	Ethion	80.6	81.8	91.8	75.4	1.47	19.6
	Ethoprop	77.8	84.7	83.8	75.7	8.48	10.2
	Fenamiphos	90.7	93.3	103	56.6	2.86	58.6
	Fipronil	86.4	90.4	86.8	81.5	4.46	6.19
	Fipronil Sulfide	81.9	77.2	76.7	70.9	5.89	7.90
	Fipronil Sulfone	70.7	73.2	62.8	64.7	3.47	2.93
	Fonofos	85.5	85.1	82.6	74.2	0.481	10.7
	Gamma-BHC	70.9	78.8	84.2	79.1	10.6	6.30
	Gamma-Chlordane	78.8	76.0	77.3	81.6	3.60	4.82
	Heptachlor	69.8	66.2	70.9	76.9	5.29	8.09
	Heptachlor Epoxide	81.5	79.7			2.23	0.864
	Hexazinone	86.4	94.1	89.6	85.7	8.51	3.49
	Malathion	89.8	95.6	87.0	82.1	6.29	5.75
	Metalaxyl	78.5	95.0	74.2	78.3	19.0	4.87
	Methoxychlor	92.9	89.9	88.4	96.0	3.35	8.21
	Metolachlor	78.1	96.5	57.0	68.4	21.1	17.3
	Metribuzin	196	111	249	260	54.9	4.42
	Mevinphos	79.1	84.5	87.7	81.5	6.58	7.24
	Mirex	68.0	66.8	68.5	74.6	1.76	8.54
	Molinate	53.1	77.6	50.5	40.8	37.5	21.2
	Norflurazon	71.5	93.3	87.9	84.6	26.5	3.83
	Parathion Ethyl	84.4	87.7	80.0	73.2	3.93	8.82
	Parathion Methyl	101	94.6	107	86.2	6.08	21.9
	Pendimethalin	76.6	84.1	81.5	67.3	9.34	19.1
	Permethrin	76.3	71.4	72.6	81.8	6.53	12.0
	Phorate	86.3	83.6	73.3	72.6	3.17	1.03
	Prometon	81.9	97.7	77.1	69.3	17.6	10.7
	Prometryn	81.9	94.3	77.6	79.7	14.0	2.71
	Simazine	95.6	114	107	109	17.4	1.88
	Terbufos	87.7	89.7	90.6	83.1	2.31	8.64
	Terbutylazine	83.9	91.9	76.0	73.5	9.07	3.45
	Trifluralin	118	102	116	127	14.7	8.79
EPA 8276	Chlordane	106	101	112	114	4.80	1.22
	Toxaphene	116	107	129	130	7.85	0.0208
EPA 8321B	Glyphosate	94.4		91.5	92.6		1.22
	Pyraclostrobin	119		120	115		4.19
	Sucralose	42.2		36.4	28.4		10.1
SM 2120 B	Color (true)					1.54	
SM 2320 B-97	Total Alkalinity	102				0.457	
SM 2540 C-97	TDS					3.23	
SM 4500 F-C-97	Fluoride	95.1		96.7	97.9		0.996
SM 5310 B-00	Organic Carbon	103		103	102		0.860
USGS O-2060-01	2,4-D	113		102	100		1.78
	Acetaminophen	142		136	140		2.62
	Bentazon	62.2		12.4	13.4		7.76
	Carbamazepine	132		79.0	88.4		11.3
	Diuron	108		44.5	48.1		7.69
	Fenuron	123		40.2	38.6		4.01
	Fluridone	101		20.6	32.6		45.0
	Imidacloprid	104		130	146		11.7
	Linuron	92.2		58.7	65.4		10.7
	MCPP	121		128	134		4.67
	Primidone	133		54.8	65.7		18.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision	MS
			LCS	SMP	
USGS O-2060-01	Triclopyr	111	104 118		12.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1925883, 1925884
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1925897, 1925898
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1925897, 1925898
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1925883, 1925884
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1925883, 1925884
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1925885, 1925886
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1925885, 1925886
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1925885, 1925886
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1925885, 1925886
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1925887, 1925888
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1925893, 1925894
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1925895, 1925896
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1925893, 1925894
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1925891, 1925892
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1925891, 1925892
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1925891, 1925892
SM 2120 B / E31780	True Color measured at 450 nm	1925883, 1925884
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1925883, 1925884
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1925883, 1925884
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1925883, 1925884
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1925883, 1925884
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1925885, 1925886
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1925891, 1925892
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1925891, 1925892

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	08/28/2017			08/29/2017 16:39	DeAsia Armster	1925883, 1925884
EPA 200.7 Rev. 4.4	08/28/2017	08/29/2017	Elliott D. Healy	08/30/2017	Betina Topolski	1925897, 1925898
EPA 200.8 Rev. 5.4	08/28/2017	08/29/2017	Elliott D. Healy	08/30/2017	Nadine Brooks	1925897, 1925898
EPA 300.0 Rev. 2.1	08/28/2017			09/01/2017	Julia Storbeck	1925883, 1925884
EPA 350.1 Rev. 2.0	08/28/2017			08/29/2017	Sofia Elnemr	1925885, 1925886
EPA 351.2 Rev. 2.0	08/28/2017	08/30/2017	Adrian Shelby	08/31/2017	Joseph Suarez	1925885, 1925886
EPA 353.2 Rev. 2.0	08/28/2017			08/30/2017	Beverly Y. Sanders	1925885, 1925886
EPA 365.1 Rev. 2.0	08/28/2017	08/30/2017	Sima Feizi	08/31/2017	Lipi Saha	1925885, 1925886
EPA 365.1 Rev. 2.0 dissolved	08/28/2017			08/29/2017 14:07	Megan Treadwell	1925887
	08/28/2017			08/29/2017 14:21	Megan Treadwell	1925888
EPA 8270D	08/28/2017	08/29/2017	John Kaba	09/06/2017	Vandana T. Nagar	1925893, 1925894
	08/28/2017	09/01/2017	Fe-Val Siddell	09/05/2017	Irina Carbone	1925895, 1925896
EPA 8276	08/28/2017	08/29/2017	John Kaba	09/07/2017	John P. Burgos	1925893, 1925894
EPA 8321B	08/28/2017	08/29/2017	Hoor Shaik	08/30/2017	Juyoung Kim	1925891, 1925892
	08/28/2017	08/30/2017	Hoor Shaik	08/31/2017	Juyoung Kim	1925891, 1925892
	08/28/2017	08/31/2017	Julie Michelle Frank	08/31/2017	Juyoung Kim	1925891, 1925892
SM 2120 B	08/28/2017			08/29/2017 15:56	Tanya Welborn	1925883
	08/28/2017			08/29/2017 15:57	Tanya Welborn	1925884
SM 2320 B-97	08/28/2017			08/30/2017	Dale L. Simmons	1925883, 1925884
SM 2540 C-97	08/28/2017			08/30/2017	Yijie Li	1925883, 1925884
SM 2540 D-97	08/28/2017			08/30/2017	Yijie Li	1925883, 1925884
SM 4500 F-C-97	08/28/2017			08/30/2017	Dale L. Simmons	1925883, 1925884
SM 5310 B-00	08/28/2017			09/01/2017	Ping Hua	1925885, 1925886
USGS O-2060-01	08/28/2017	08/30/2017	Hoor Shaik	09/02/2017	Juyoung Kim	1925891, 1925892