

Chemical Analysis Report

SW-DIST-2020-02-19-02

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

Event Description: **Wolf Branch**
Request ID: **RQ-2020-02-17-27**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 16-MAR-2020 10:42



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 by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Wolf Branch Canal @ Manns Harbor Dr

Collection Date/Time: 02/18/2020 11:10

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2159090	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P379325	
	EPA 300.0 Rev. 2.1	Bromide	47		mg Br/L	P379837	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P379740	
	SM 2540 D-2011	TSS	6	IA	mg/L	P379969	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P379746	
2159091	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P379730	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P379312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P379272	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P379841	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P379591	
2159092	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.092		mg P/L	P379216	
2159126	EPA 8321B	2,4-D	0.0093		ug/L	P379284	
		Acesulfame K**	0.10	U	ug/L	P379179	
		AMPA**	0.10	UJ	ug/L	P379179	SUR
		Sucralose**	0.37		ug/L	P379179	
		Acetaminophen**	0.0080	U	ug/L	P379284	
		Acetamiprid**	0.0020	U	ug/L	P379284	
		Endothall**	0.25	U	ug/L	P379179	
		Glufosinate**	0.10	UJ	ug/L	P379179	MS, SUR
		Glyphosate**	0.10	UJ	ug/L	P379179	MS, SUR
		Afidopyropen**	0.0020	UJ	ug/L	P379284	
		Bentazon	0.034		ug/L	P379284	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P379284	
		Carbamazepine**	0.0015	I	ug/L	P379284	
		Clothianidin**	0.0020	U	ug/L	P379284	
		Dinotefuran**	0.0041	I	ug/L	P379284	
		Diuron	0.0050	I	ug/L	P379284	
		Fenuron	0.016	U	ug/L	P379284	
		Fluridone**	0.012		ug/L	P379284	
		Imazapyr**	0.016		ug/L	P379284	
		Hydrocodone**	0.0020	U	ug/L	P379284	
		Ibuprofen**	0.020	U	ug/L	P379284	
		Imidacloprid	0.0034	I	ug/L	P379284	MS
		Linuron	0.0040	U	ug/L	P379284	
		Mandestrobin**	0.0020	UJ	ug/L	P379284	
		MCP	0.0033	I	ug/L	P379284	
		Naproxen**	0.0080	U	ug/L	P379284	
		Primidone**	0.0052	I	ug/L	P379284	
		Pyraclostrobin**	0.0020	U	ug/L	P379284	
		Thiamethoxam**	0.0020	U	ug/L	P379284	
		Tolfenpyrad**	0.0020	U	ug/L	P379284	
		Triclopyr**	0.0040	U	ug/L	P379284	
2159143	EPA 8270E	Aldrin	4.1	U	ng/L	P379464	

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2159143	EPA 8270E	Alpha-BHC	2.1	U	ng/L	P379464		
		Alpha-Chlordane	1.0	U	ng/L	P379464		
		Beta-BHC	10	U	ng/L	P379464		
		Beta-Cyfluthrin**	15	U	ng/L	P379464		
		Bifenthrin**	4.1	U	ng/L	P379464		
		Delta-BHC	8.2	U	ng/L	P379464		
		Gamma-BHC	8.2	U	ng/L	P379464		
		Chlorothalonil	2.1	U	ng/L	P379464		
		Cis-Nonachlor**	1.0	U	ng/L	P379464		
		Cypermethrin	21	U	ng/L	P379464		
		Dacthal**	1.0	U	ng/L	P379464		
		DDD-p,p'	6.2	U	ng/L	P379464		
		DDE-p,p'	6.2	U	ng/L	P379464		
		DDT-p,p'	7.2	U	ng/L	P379464		
		Dicofol	31	U	ng/L	P379464		
		Dieldrin	4.1	U	ng/L	P379464		
		Endosulfan I	4.1	U	ng/L	P379464		
		Endosulfan II	4.1	U	ng/L	P379464		
		Endosulfan Sulfate	2.1	U	ng/L	P379464		
		Endrin	2.1	U	ng/L	P379464		
		Endrin Aldehyde	2.1	U	ng/L	P379464		
		Endrin Ketone	2.1	U	ng/L	P379464		
		Ethalfuralin**	3.1	U	ng/L	P379464		
		Gamma-Chlordane	1.0	U	ng/L	P379464		
		Heptachlor	1.5	U	ng/L	P379464		
		Heptachlor Epoxide	2.1	U	ng/L	P379464		
		Hexachlorobenzene	2.1	U	ng/L	P379464		
		Lambda-Cyhalothrin**	15	U	ng/L	P379464		
		Methoxychlor	4.1	U	ng/L	P379464		
		Mirex	2.1	U	ng/L	P379464		
		Permethrin	10	U	ng/L	P379464		
		Phenothrin**	31	UJ	ng/L	P379464	LCS	
		Prallethrin**	31	U	ng/L	P379464		
		Trans-Nonachlor**	1.0	U	ng/L	P379464		
		Trifluralin	2.6	U	ng/L	P379464		
		EPA 8276	Chlordane	5.2	U	ng/L	P379464	
			Toxaphene	31	U	ng/L	P379464	
2159144	EPA 8270E	Acetochlor	0.23	U	ng/L	P379289		
		Alachlor	0.23	U	ng/L	P379289		
		Ametryn	0.81	I	ng/L	P379289		
		Atrazine	16		ng/L	P379289		
		Atrazine Desethyl	3.4	I	ng/L	P379289	RPD	
		Azinphos Methyl	1.9	U	ng/L	P379289		
		Bromacil	0.47	U	ng/L	P379289		
		Butylate	0.37	U	ng/L	P379289	RPS	

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2159144	EPA 8270E	Carbophenothion	0.47	U	ng/L	P379289	
		Chlorpyrifos Ethyl	0.23	U	ng/L	P379289	
		Chlorpyrifos Methyl	0.047	U	ng/L	P379289	
		Cyanazine	3.0	U	ng/L	P379289	
		Demeton	1.4	UJ	ng/L	P379289	RPD
		Diazinon	0.12	U	ng/L	P379289	
		Dimethenamid**	0.093	U	ng/L	P379289	
		Disulfoton	0.47	U	ng/L	P379289	
		Dithiopyr**	1.1		ng/L	P379289	
		EPTC	1.2	U	ng/L	P379289	RPD
		Ethion	0.14	U	ng/L	P379289	
		Ethoprop	0.093	U	ng/L	P379289	
		Fenamiphos	0.47	U	ng/L	P379289	
		Fipronil	0.23	U	ng/L	P379289	
		Fipronil Desulfinyl**	0.24	I	ng/L	P379289	
		Fipronil Sulfide	0.14	U	ng/L	P379289	
		Fipronil Sulfone	0.25	I	ng/L	P379289	
		Flumioxazin**	1.6	U	ng/L	P379289	
		Fonofos	0.19	U	ng/L	P379289	
		Hexazinone	20		ng/L	P379289	
		Imazalil**	0.70	U	ng/L	P379289	MS, RPD
		Malathion	0.33	U	ng/L	P379289	
		Metalaxyl	1.6	I	ng/L	P379289	
		Metolachlor	1.4	I	ng/L	P379289	
		Metribuzin	3.0	U	ng/L	P379289	
		Mevinphos	0.47	U	ng/L	P379289	
		Molinate	0.28	U	ng/L	P379289	
		Norflurazon	0.68	I	ng/L	P379289	
		Oxadiazon**	0.27	I	ng/L	P379289	
		Parathion Ethyl	0.23	U	ng/L	P379289	
		Parathion Methyl	0.51	U	ng/L	P379289	
		Pendimethalin	0.93	U	ng/L	P379289	
		Phorate	0.23	U	ng/L	P379289	
		Prodiamine**	0.16	U	ng/L	P379289	RPD
		Prometon	0.84	U	ng/L	P379289	
		Prometryn	0.19	U	ng/L	P379289	
		Pronamide**	0.14	U	ng/L	P379289	
		Propiconazole**	0.66	I	ng/L	P379289	
		Simazine	5.5		ng/L	P379289	
		Sulfentrazone**	3.2	J	ng/L	P379289	RPD
		Tebuconazole**	0.47	UJ	ng/L	P379289	RPD
		Terbufos	0.093	U	ng/L	P379289	
		Terbuthylazine	0.40	U	ng/L	P379289	
2159153	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P379691	
		Magnesium	889		mg/L	P379691	

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2159153	EPA 200.7 Rev. 4.4	Zinc	15	U	ug/L	P379691	
	EPA 200.8 Rev. 5.4	Aluminum	75	I	ug/L	P379691	
		Antimony	0.22	I	ug/L	P379691	
		Arsenic	2.77		ug/L	P379691	
		Cadmium	0.080	U	ug/L	P379691	
		Chromium	1.6	U	ug/L	P379691	
		Copper	1.6	U	ug/L	P379691	
		Lead	0.80	U	ug/L	P379691	
		Nickel	2.0	U	ug/L	P379691	
		Selenium	0.80	U	ug/L	P379691	
		Silver	0.10	U	ug/L	P380290	
		Thallium	1.0	U	ug/L	P379691	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8270E: MS accuracy for some parameters not assessed due to high content of these parameters in the sample spiked. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379325

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379691

Component	Result	Code	Units
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379691

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380290

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379837

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379730

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379312

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P379272

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P379841

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P379216

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

Reference Method: EPA 8270E
 Batch ID: P379289

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.0	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Carbophenothion	0.50	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.050	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	1.5	U	ng/L
Diazinon	0.12	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Flumioxazin	1.8	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Imazalil	0.75	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.75	U	ng/L
Metolachlor	0.50	U	ng/L
Metribuzin	3.2	U	ng/L
Mevinphos	0.50	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P379289

Component	Result	Code	Units
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Pronamide	0.15	U	ng/L
Propiconazole	0.50	U	ng/L
Simazine	0.50	U	ng/L
Sulfentrazone	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8270E
Batch ID: P379464

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	10	U	ng/L
Beta-Cyfluthrin	15	U	ng/L
Bifenthrin	4.0	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cis-Nonachlor	1.0	U	ng/L
Cypermethrin	20	U	ng/L
Dacthal	1.0	U	ng/L
DDD-p,p'	6.0	U	ng/L
DDE-p,p'	6.0	U	ng/L
DDT-p,p'	7.0	U	ng/L
Delta-BHC	8.0	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
Ethalfuralin	3.0	U	ng/L
Gamma-BHC	8.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Hexachlorobenzene	2.0	U	ng/L
Lambda-Cyhalothrin	15	U	ng/L
Methoxychlor	4.0	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P379464

Component	Result	Code	Units
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Phenothrin	30	U	ng/L
Prallethrin	30	U	ng/L
Trans-Nonachlor	1.0	U	ng/L
Trifluralin	2.5	U	ng/L

Reference Method: EPA 8276
Batch ID: P379464

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

Reference Method: EPA 8321B
Batch ID: P379179

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P379284

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P379284

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P379740

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

Reference Method: SM 2540 D-2011
Batch ID: P379969

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379591

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	108		P	85 - 115
Magnesium	103		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	93.4		P	85 - 115
Antimony	93.5		P	85 - 115
Arsenic	91.2		P	85 - 115
Cadmium	92.4		P	85 - 115
Chromium	93.8		P	85 - 115
Copper	95.0		P	85 - 115
Lead	91.8		P	85 - 115
Nickel	93.5		P	85 - 115
Selenium	89.1		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	99.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379837

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379730

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379841

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379216

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

Reference Method: EPA 8270E
Batch ID: P379289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	99.5	94.5	P/P	71 - 122
Alachlor	99.0	94.9	P/P	70 - 121
Ametryn	103	116	P/P	49 - 137
Atrazine	100	101	P/P	76 - 125
Atrazine Desethyl	85.0	80.3	P/P	31 - 144
Azinphos Methyl	133	111	P/P	67 - 150
Bromacil	89.5	99.6	P/P	36 - 121
Butylate	48.8	60.6	P/P	33 - 88.0
Carbophenothion	104	108	P/P	50 - 150
Chlorpyrifos Ethyl	104	103	P/P	73 - 117
Chlorpyrifos Methyl	97.9	92.9	P/P	68 - 121
Cyanazine	127	99.0	P/P	20 - 250
Demeton	78.6	56.8	P/P	30 - 123
Diazinon	91.9	89.8	P/P	70 - 128
Dimethenamid	92.4	94.4	P/P	66 - 122
Disulfoton	87.6	65.7	P/P	46 - 124
Dithiopyr	97.4	98.5	P/P	69 - 122
EPTC	46.5	57.9	P/P	31 - 90.0
Ethion	98.9	107	P/P	45 - 135
Ethoprop	87.0	79.0	P/P	59 - 118
Fenamiphos	105	102	P/P	30 - 136
Fipronil	87.5	108	P/P	57 - 127
Fipronil Desulfinyl	94.6	107	P/P	51 - 122
Fipronil Sulfide	88.8	107	P/P	57 - 119
Fipronil Sulfone	95.4	104	P/P	51 - 119
Flumioxazin	157	161	P/P	70 - 200
Fonofos	93.4	77.1	P/P	60 - 120
Hexazinone	96.5	116	P/P	57 - 142
Imazalil	94.4	90.8	P/P	50 - 150
Malathion	109	111	P/P	67 - 128
Metaxyl	106	101	P/P	21 - 148
Metolachlor	92.3	94.5	P/P	70 - 120
Metribuzin	104	104	P/P	20 - 253
Mevinphos	79.5	69.5	P/P	47 - 116
Molinate	66.0	63.7	P/P	41 - 99.0
Norflurazon	91.8	109	P/P	54 - 127
Oxadiazon	95.2	107	P/P	65 - 122
Parathion Ethyl	95.4	95.5	P/P	71 - 113
Parathion Methyl	95.9	96.4	P/P	73 - 129
Pendimethalin	93.1	94.3	P/P	63 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P379289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Phorate	90.0	75.7	P/P	48 - 118
Prodiamine	104	93.8	P/P	20 - 144
Prometon	94.8	98.6	P/P	53 - 120
Prometryn	102	103	P/P	63 - 119
Pronamide	92.7	104	P/P	50 - 150
Propiconazole	99.8	117	P/P	50 - 150
Simazine	101	101	P/P	77 - 129
Sulfentrazone	70.2	99.9	P/P	50 - 150
Tebuconazole	59.8	103	P/P	20 - 118
Terbufos	92.6	79.5	P/P	61 - 119
Terbuthylazine	96.0	98.0	P/P	75 - 119

Reference Method: EPA 8270E
 Batch ID: P379464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	36.4	34.7	P/P	20 - 87.0
Alpha-BHC	79.5	78.2	P/P	65 - 142
Alpha-Chlordane	84.0	81.6	P/P	58 - 106
Beta-BHC	109	111	P/P	65 - 179
Beta-Cyfluthrin	101	89.0	P/P	50 - 150
Bifenthrin	79.6	81.2	P/P	38 - 128
Chlorothalonil	114	102	P/P	20 - 214
Cis-Nonachlor	87.8	86.7	P/P	56 - 113
Cypermethrin	83.1	85.5	P/P	37 - 130
Dacthal	90.0	88.5	P/P	50 - 150
DDD-p,p'	89.7	90.3	P/P	66 - 119
DDE-p,p'	81.7	80.3	P/P	53 - 108
DDT-p,p'	76.6	76.7	P/P	57 - 133
Delta-BHC	140	136	P/P	68 - 187
Dicofol	97.9	106	P/P	66 - 123
Dieldrin	95.3	90.1	P/P	65 - 111
Endosulfan I	95.7	96.7	P/P	65 - 115
Endosulfan II	97.5	96.3	P/P	68 - 133
Endosulfan Sulfate	97.1	96.9	P/P	62 - 127
Endrin	91.7	87.9	P/P	64 - 122
Endrin Aldehyde	106	102	P/P	61 - 132
Endrin Ketone	94.5	95.3	P/P	66 - 120
Ethalfuralin	73.6	71.3	P/P	57 - 127
Gamma-BHC	103	101	P/P	71 - 158
Gamma-Chlordane	78.7	79.0	P/P	53 - 106
Heptachlor	68.7	65.6	P/P	45 - 96.0
Heptachlor Epoxide	87.5	85.4	P/P	64 - 109
Hexachlorobenzene	63.9	62.2	P/P	46 - 103
Lambda-Cyhalothrin	91.6	89.7	P/P	50 - 150
Methoxychlor	87.9	82.0	P/P	69 - 149
Mirex	64.8	64.9	P/P	31 - 90.0
Permethrin	72.0	74.0	P/P	41 - 108
Phenothrin	42.9	42.5	F/F	50 - 150
Prallethrin	53.6	52.0	P/P	40 - 140
Trans-Nonachlor	80.9	79.8	P/P	50 - 107
Trifluralin	74.3	73.9	P/P	58 - 119

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276

Batch ID: P379464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	100	102	P/P	47 - 119
Toxaphene	99.2	99.7	P/P	41 - 112

Reference Method: EPA 8321B

Batch ID: P379179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.5		P	40 - 150
AMPA	98.1		P	40 - 150
Endothall	86.8		P	40 - 150
Glufosinate	95.0		P	40 - 150
Glyphosate	93.1		P	40 - 140
Sucralose	113		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P379284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	134		P	30 - 160
Acetaminophen	94.3		P	30 - 160
Acetamiprid	91.3		P	30 - 160
Afidopyropen	96.5		P	30 - 160
Bentazon	89.5		P	30 - 160
Benzovindiflupyr	85.5		P	30 - 160
Carbamazepine	96.6		P	30 - 160
Clothianidin	106		P	30 - 160
Dinotefuran	107		P	30 - 160
Diuron	96.5		P	30 - 160
Fenuron	104		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	87.0		P	30 - 160
Imazapyr	72.8		P	30 - 160
Imidacloprid	120		P	30 - 160
Linuron	84.6		P	30 - 160
Mandestrobin	91.0		P	30 - 160
MCPP	145		P	30 - 160
Naproxen	112		P	30 - 160
Primidone	104		P	30 - 160
Pyraclostrobin	78.1		P	30 - 160
Thiamethoxam	93.8		P	30 - 160
Tolfenpyrad	70.0		P	30 - 160
Triclopyr	131		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P379740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	106		P	98 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160160	Iron	98.3		P	70 - 130
2160160	Zinc	102		P	70 - 130
2160188	Iron	101	98.8	P/P	70 - 130
2160188	Zinc	106	104	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160160	Aluminum	116		P	70 - 130
2160160	Antimony	102		P	70 - 130
2160160	Arsenic	113		P	70 - 130
2160160	Cadmium	97.8		P	70 - 130
2160160	Chromium	98.1		P	70 - 130
2160160	Copper	116		P	70 - 130
2160160	Lead	107		P	70 - 130
2160160	Nickel	116		P	70 - 130
2160160	Selenium	102		P	70 - 130
2160160	Thallium	112		P	70 - 130
2160188	Aluminum	104	106	P/P	70 - 130
2160188	Antimony	97.5	101	P/P	70 - 130
2160188	Arsenic	110	110	P/P	70 - 130
2160188	Cadmium	97.0	101	P/P	70 - 130
2160188	Chromium	97.9	104	P/P	70 - 130
2160188	Copper	105	110	P/P	70 - 130
2160188	Lead	101	104	P/P	70 - 130
2160188	Nickel	108	113	P/P	70 - 130
2160188	Selenium	103	104	P/P	70 - 130
2160188	Thallium	106	105	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158865	Silver	101	104	P/P	70 - 130
2160419	Silver	103		P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2159164	Bromide	96.2	97.4	P/P	90 - 110
2159364	Bromide	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2159177	Ammonia-N	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P379312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158896	Kjeldahl Nitrogen	99.4	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P379272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158333	NO2NO3-N	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P379841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158899	Total-P	98.2	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P379216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2159122	O-Phosphate-P	93.2	90.5	P/P	90 - 110

Reference Method: EPA 8270E
 Batch ID: P379289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158576	Acetochlor	101	96.3	P/P	68 - 126
2158576	Alachlor	103	97.8	P/P	66 - 125
2158576	Ametryn	101	98.3	P/P	31 - 182
2158576	Atrazine Desethyl	60.9	84.6	P/P	13 - 161
2158576	Azinphos Methyl	125	122	P/P	54 - 162
2158576	Bromacil	88.2	78.7	P/P	34 - 144
2158576	Butylate	32.5	50.9	P/P	16 - 92.0
2158576	Carbophenothion	110	101	P/P	50 - 150
2158576	Chlorpyrifos Ethyl	123	108	P/P	63 - 124
2158576	Chlorpyrifos Methyl	103	99.9	P/P	64 - 125
2158576	Cyanazine	106	102	P/P	13 - 245
2158576	Demeton	85.9	87.5	P/P	20 - 154
2158576	Diazinon	97.0	93.7	P/P	66 - 141
2158576	Dimethenamid	100	94.3	P/P	50 - 130
2158576	Disulfoton	90.2	89.5	P/P	55 - 130
2158576	Dithiopyr	99.8	92.7	P/P	66 - 122
2158576	EPTC	29.1	41.4	P/P	15 - 93.0
2158576	Ethion	121	107	P/P	15 - 148
2158576	Ethoprop	95.7	96.1	P/P	59 - 126
2158576	Fenamiphos	100	94.3	P/P	39 - 137
2158576	Fipronil	109	100	P/P	47 - 131
2158576	Fipronil Desulfinyl	110	97.4	P/P	43 - 121
2158576	Fipronil Sulfide	112	98.5	P/P	29 - 134
2158576	Fipronil Sulfone	108	90.8	P/P	19 - 131
2158576	Flumioxazin	177	174	P/P	70 - 200
2158576	Fonofos	93.0	85.8	P/P	62 - 128
2158576	Imazalil	66.8	210	P/F	50 - 150
2158576	Malathion	115	104	P/P	54 - 135

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P379289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158576	Metalaxyl	105	100	P/P	46 - 136
2158576	Mevinphos	83.8	86.7	P/P	44 - 135
2158576	Molinate	57.2	68.8	P/P	31 - 104
2158576	Norflurazon	106	85.4	P/P	32 - 134
2158576	Oxadiazon	96.3	88.1	P/P	55 - 123
2158576	Parathion Ethyl	108	97.6	P/P	67 - 120
2158576	Parathion Methyl	109	105	P/P	70 - 140
2158576	Pendimethalin	110	101	P/P	59 - 145
2158576	Phorate	82.6	86.5	P/P	52 - 127
2158576	Prodiamine	110	76.7	P/P	11 - 157
2158576	Prometon	89.1	93.4	P/P	55 - 130
2158576	Prometryn	106	99.8	P/P	55 - 127
2158576	Pronamide	99.4	108	P/P	50 - 150
2158576	Propiconazole	112	111	P/P	50 - 150
2158576	Simazine	119	107	P/P	58 - 159
2158576	Sulfentrazone	100	90.6	P/P	50 - 150
2158576	Tebuconazole	97.4	76.4	P/P	10 - 122
2158576	Terbufos	97.9	98.6	P/P	65 - 131
2158576	Terbutylazine	102	95.1	P/P	63 - 131

Reference Method: EPA 8270E
Batch ID: P379464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158803	Aldrin	56.0	56.7	P/P	32 - 82.0
2158803	Alpha-BHC	79.3	80.8	P/P	68 - 157
2158803	Alpha-Chlordane	89.3	86.1	P/P	54 - 108
2158803	Beta-BHC	115	116	P/P	54 - 200
2158803	Beta-Cyfluthrin	102	103	P/P	50 - 150
2158803	Bifenthrin	86.1	85.7	P/P	49 - 124
2158803	Chlorothalonil	35.9	44.6	P/P	10 - 289
2158803	Cis-Nonachlor	90.5	90.0	P/P	53 - 112
2158803	Cypermethrin	91.7	94.5	P/P	43 - 141
2158803	Dacthal	90.9	89.7	P/P	50 - 150
2158803	DDD-p,p'	91.3	91.8	P/P	58 - 125
2158803	DDE-p,p'	87.6	85.8	P/P	50 - 108
2158803	DDT-p,p'	81.8	82.3	P/P	52 - 140
2158803	Delta-BHC	146	142	P/P	61 - 228
2158803	Dicofol	103	91.6	P/P	59 - 130
2158803	Dieldrin	103	97.2	P/P	57 - 121
2158803	Endosulfan I	104	92.0	P/P	62 - 123
2158803	Endosulfan II	99.2	98.3	P/P	48 - 163
2158803	Endosulfan Sulfate	98.3	101	P/P	63 - 132
2158803	Endrin	91.4	92.9	P/P	58 - 128
2158803	Endrin Aldehyde	95.1	87.6	P/P	44 - 126
2158803	Endrin Ketone	96.7	96.3	P/P	68 - 127
2158803	Ethalfuralin	75.5	74.4	P/P	55 - 131
2158803	Gamma-BHC	106	107	P/P	54 - 206
2158803	Gamma-Chlordane	83.9	83.9	P/P	52 - 105
2158803	Heptachlor	69.7	72.7	P/P	47 - 94.0
2158803	Heptachlor Epoxide	91.6	91.2	P/P	61 - 113
2158803	Hexachlorobenzene	65.4	66.1	P/P	45 - 100

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P379464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158803	Lambda-Cyhalothrin	97.6	97.1	P/P	50 - 150
2158803	Methoxychlor	89.5	87.0	P/P	63 - 153
2158803	Mirex	72.3	72.7	P/P	38 - 90.0
2158803	Permethrin	81.2	81.7	P/P	45 - 112
2158803	Phenothrin	65.6	65.5	P/P	50 - 150
2158803	Prallethrin	64.3	63.0	P/P	40 - 140
2158803	Trans-Nonachlor	86.1	84.9	P/P	50 - 103
2158803	Trifluralin	76.7	77.0	P/P	57 - 122

Reference Method: EPA 8276
Batch ID: P379464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2159216	Chlordane	74.2	74.6	P/P	34 - 129
2159216	Toxaphene	99.9	102	P/P	26 - 123

Reference Method: EPA 8321B
Batch ID: P379179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158377	Acesulfame K	79.3	75.2	P/P	40 - 150
2158377	AMPA	83.7	77.7	P/P	40 - 150
2158377	Endothall	106	97.5	P/P	40 - 150
2158377	Glufosinate	195	246	F/F	40 - 150
2158377	Glyphosate	183	213	F/F	40 - 140
2158377	Sucralose	108	101	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P379284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158935	2,4-D	132	135	P/P	30 - 160
2158935	Acetaminophen	104	101	P/P	30 - 160
2158935	Acetamiprid	98.3	82.8	P/P	30 - 160
2158935	Afidopyropen	110	101	P/P	30 - 160
2158935	Bentazon	76.2	81.1	P/P	30 - 160
2158935	Benzovindiflupyr	83.9	82.0	P/P	30 - 160
2158935	Carbamazepine	85.7	91.8	P/P	30 - 160
2158935	Clothianidin	112	104	P/P	30 - 160
2158935	Dinotefuran	130	126	P/P	30 - 160
2158935	Diuron	83.6	83.9	P/P	30 - 160
2158935	Fenuron	89.5	81.7	P/P	30 - 160
2158935	Fluridone	104	107	P/P	30 - 160
2158935	Hydrocodone	120	102	P/P	30 - 160
2158935	Ibuprofen	87.9	78.7	P/P	30 - 160
2158935	Imazapyr	102	104	P/P	30 - 160
2158935	Imidacloprid	157	169	P/F	30 - 160
2158935	Linuron	81.1	81.5	P/P	30 - 160
2158935	Mandestrobin	87.4	90.5	P/P	30 - 160
2158935	MCP	149	154	P/P	30 - 160
2158935	Naproxen	139	129	P/P	30 - 160
2158935	Primidone	97.0	103	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P379284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158935	Pyraclostrobin	62.9	66.0	P/P	30 - 160
2158935	Thiamethoxam	142	138	P/P	30 - 160
2158935	Tolfenpyrad	60.3	59.5	P/P	30 - 160
2158935	Triclopyr	122	125	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157633	Fluoride	97.3	98.9	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P379591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160032	Organic Carbon	101	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159024	Turbidity	6.30	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P379691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160188	Iron	2.24	Spike	P	0 - 20
2160188	Magnesium	4.67	Spike	P	0 - 20
2160188	Zinc	1.60	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P379691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160188	Aluminum	2.35	Spike	P	0 - 20
2160188	Antimony	3.87	Spike	P	0 - 20
2160188	Arsenic	0.749	Spike	P	0 - 20
2160188	Cadmium	4.46	Spike	P	0 - 20
2160188	Chromium	5.67	Spike	P	0 - 20
2160188	Copper	4.13	Spike	P	0 - 20
2160188	Lead	2.54	Spike	P	0 - 20
2160188	Nickel	4.35	Spike	P	0 - 20
2160188	Selenium	1.29	Spike	P	0 - 20
2160188	Thallium	0.549	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158865	Silver	3.07	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159164	Bromide	0.853	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159177	Ammonia-N	0.398	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158896	Kjeldahl Nitrogen	2.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158333	NO2NO3-N	2.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158899	Total-P	0.667	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159122	O-Phosphate-P	2.35	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P379289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158576	Acetochlor	4.82	Spike	P	0 - 30
2158576	Alachlor	4.86	Spike	P	0 - 30
2158576	Ametryn	2.56	Spike	P	0 - 30
2158576	Atrazine	0.914	Spike	P	0 - 30
2158576	Atrazine Desethyl	32.6	Spike	F	0 - 30
2158576	Azinphos Methyl	2.79	Spike	P	0 - 30
2158576	Bromacil	6.53	Spike	P	0 - 30
2158576	Butylate	44.1	Spike	F	0 - 30
2158576	Carbophenothion	8.54	Spike	P	0 - 30
2158576	Chlorpyrifos Ethyl	12.8	Spike	P	0 - 30
2158576	Chlorpyrifos Methyl	3.51	Spike	P	0 - 30
2158576	Cyanazine	3.58	Spike	P	0 - 30
2158576	Demeton	1.84	Spike	P	0 - 30
2158576	Diazinon	3.38	Spike	P	0 - 30
2158576	Dimethenamid	5.93	Spike	P	0 - 30
2158576	Disulfoton	0.861	Spike	P	0 - 30
2158576	Dithiopyr	6.97	Spike	P	0 - 30
2158576	EPTC	34.9	Spike	F	0 - 30
2158576	Ethion	12.1	Spike	P	0 - 30
2158576	Ethoprop	0.412	Spike	P	0 - 30
2158576	Fenamiphos	6.01	Spike	P	0 - 30
2158576	Fipronil	8.25	Spike	P	0 - 30
2158576	Fipronil Desulfinyl	12.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P379289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158576	Fipronil Sulfide	12.6	Spike	P	0 - 30
2158576	Fipronil Sulfone	15.0	Spike	P	0 - 30
2158576	Flumioxazin	1.43	Spike	P	0 - 30
2158576	Fonofos	8.11	Spike	P	0 - 30
2158576	Hexazinone	2.10	Spike	P	0 - 30
2158576	Imazalil	103	Spike	F	0 - 30
2158576	Malathion	7.70	Spike	P	0 - 30
2158576	Metalaxyl	4.64	Spike	P	0 - 30
2158576	Metolachlor	0.666	Spike	P	0 - 30
2158576	Metribuzin	5.83	Spike	P	0 - 30
2158576	Mevinphos	3.40	Spike	P	0 - 30
2158576	Molinate	18.4	Spike	P	0 - 30
2158576	Norflurazon	14.3	Spike	P	0 - 30
2158576	Oxadiazon	7.41	Spike	P	0 - 30
2158576	Parathion Ethyl	10.3	Spike	P	0 - 30
2158576	Parathion Methyl	3.53	Spike	P	0 - 30
2158576	Pendimethalin	8.53	Spike	P	0 - 30
2158576	Phorate	4.55	Spike	P	0 - 30
2158576	Prodiamine	35.8	Spike	F	0 - 30
2158576	Prometon	4.70	Spike	P	0 - 30
2158576	Prometryn	6.20	Spike	P	0 - 30
2158576	Pronamide	7.96	Spike	P	0 - 30
2158576	Propiconazole	0.837	Spike	P	0 - 30
2158576	Simazine	10.9	Spike	P	0 - 30
2158576	Sulfentrazone	10.3	Spike	P	0 - 30
2158576	Tebuconazole	22.2	Spike	P	0 - 30
2158576	Terbufos	0.749	Spike	P	0 - 30
2158576	Terbutylazine	6.68	Spike	P	0 - 30
LFB	Acetochlor	5.23	LCS	P	0 - 30
LFB	Alachlor	4.30	LCS	P	0 - 30
LFB	Ametryn	12.1	LCS	P	0 - 30
LFB	Atrazine	0.993	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.76	LCS	P	0 - 30
LFB	Azinphos Methyl	18.7	LCS	P	0 - 30
LFB	Bromacil	10.6	LCS	P	0 - 30
LFB	Butylate	21.6	LCS	P	0 - 30
LFB	Carbophenothion	4.56	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	0.380	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	5.19	LCS	P	0 - 30
LFB	Cyanazine	24.5	LCS	P	0 - 30
LFB	Demeton	32.1	LCS	F	0 - 30
LFB	Diazinon	2.31	LCS	P	0 - 30
LFB	Dimethenamid	2.12	LCS	P	0 - 30
LFB	Disulfoton	28.6	LCS	P	0 - 30
LFB	Dithiopyr	1.16	LCS	P	0 - 30
LFB	EPTC	21.8	LCS	P	0 - 30
LFB	Ethion	7.62	LCS	P	0 - 30
LFB	Ethoprop	9.55	LCS	P	0 - 30
LFB	Fenamiphos	2.54	LCS	P	0 - 30
LFB	Fipronil	21.2	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	12.8	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P379289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	18.9	LCS	P	0 - 30
LFB	Fipronil Sulfone	8.42	LCS	P	0 - 30
LFB	Flumioxazin	2.02	LCS	P	0 - 30
LFB	Fonofos	19.1	LCS	P	0 - 30
LFB	Hexazinone	18.1	LCS	P	0 - 30
LFB	Imazalil	3.84	LCS	P	0 - 30
LFB	Malathion	2.14	LCS	P	0 - 30
LFB	Metalaxyl	5.64	LCS	P	0 - 30
LFB	Metolachlor	2.33	LCS	P	0 - 30
LFB	Metribuzin	0.236	LCS	P	0 - 30
LFB	Mevinphos	13.5	LCS	P	0 - 30
LFB	Molinate	3.45	LCS	P	0 - 30
LFB	Norflurazon	17.2	LCS	P	0 - 30
LFB	Oxadiazon	11.3	LCS	P	0 - 30
LFB	Parathion Ethyl	0.157	LCS	P	0 - 30
LFB	Parathion Methyl	0.529	LCS	P	0 - 30
LFB	Pendimethalin	1.32	LCS	P	0 - 30
LFB	Phorate	17.3	LCS	P	0 - 30
LFB	Prodiamine	10.4	LCS	P	0 - 30
LFB	Prometon	3.91	LCS	P	0 - 30
LFB	Prometryn	1.77	LCS	P	0 - 30
LFB	Pronamide	11.4	LCS	P	0 - 30
LFB	Propiconazole	15.9	LCS	P	0 - 30
LFB	Simazine	0.173	LCS	P	0 - 30
LFB	Sulfentrazone	34.9	LCS	F	0 - 30
LFB	Tebuconazole	53.0	LCS	F	0 - 30
LFB	Terbufos	15.2	LCS	P	0 - 30
LFB	Terbutylazine	2.05	LCS	P	0 - 30

Reference Method: EPA 8270E
Batch ID: P379464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158803	Aldrin	1.11	Spike	P	0 - 30
2158803	Alpha-BHC	1.89	Spike	P	0 - 30
2158803	Alpha-Chlordane	3.68	Spike	P	0 - 30
2158803	Beta-BHC	1.56	Spike	P	0 - 30
2158803	Beta-Cyfluthrin	0.782	Spike	P	0 - 30
2158803	Bifenthrin	0.444	Spike	P	0 - 30
2158803	Chlorothalonil	21.6	Spike	P	0 - 30
2158803	Cis-Nonachlor	0.498	Spike	P	0 - 30
2158803	Cypermethrin	3.09	Spike	P	0 - 30
2158803	Dacthal	1.23	Spike	P	0 - 30
2158803	DDD-p,p'	0.494	Spike	P	0 - 30
2158803	DDE-p,p'	2.10	Spike	P	0 - 30
2158803	DDT-p,p'	0.674	Spike	P	0 - 30
2158803	Delta-BHC	2.12	Spike	P	0 - 30
2158803	Dicofol	11.9	Spike	P	0 - 30
2158803	Dieldrin	5.32	Spike	P	0 - 30
2158803	Endosulfan I	12.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P379464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158803	Endosulfan II	0.888	Spike	P	0 - 30
2158803	Endosulfan Sulfate	2.97	Spike	P	0 - 30
2158803	Endrin	1.59	Spike	P	0 - 30
2158803	Endrin Aldehyde	8.23	Spike	P	0 - 30
2158803	Endrin Ketone	0.387	Spike	P	0 - 30
2158803	Ethalfuralin	1.42	Spike	P	0 - 30
2158803	Gamma-BHC	1.26	Spike	P	0 - 30
2158803	Gamma-Chlordane	0.0441	Spike	P	0 - 30
2158803	Heptachlor	4.17	Spike	P	0 - 30
2158803	Heptachlor Epoxide	0.434	Spike	P	0 - 30
2158803	Hexachlorobenzene	1.08	Spike	P	0 - 30
2158803	Lambda-Cyhalothrin	0.432	Spike	P	0 - 30
2158803	Methoxychlor	2.75	Spike	P	0 - 30
2158803	Mirex	0.533	Spike	P	0 - 30
2158803	Permethrin	0.573	Spike	P	0 - 30
2158803	Phenothrin	0.205	Spike	P	0 - 30
2158803	Prallethrin	1.95	Spike	P	0 - 30
2158803	Trans-Nonachlor	1.42	Spike	P	0 - 30
2158803	Trifluralin	0.438	Spike	P	0 - 30
LFB	Aldrin	4.57	LCS	P	0 - 30
LFB	Alpha-BHC	1.69	LCS	P	0 - 30
LFB	Alpha-Chlordane	2.96	LCS	P	0 - 30
LFB	Beta-BHC	1.65	LCS	P	0 - 30
LFB	Beta-Cyfluthrin	12.9	LCS	P	0 - 30
LFB	Bifenthrin	2.02	LCS	P	0 - 30
LFB	Chlorothalonil	11.1	LCS	P	0 - 30
LFB	Cis-Nonachlor	1.24	LCS	P	0 - 30
LFB	Cypermethrin	2.85	LCS	P	0 - 30
LFB	Dacthal	1.75	LCS	P	0 - 30
LFB	DDD-p,p'	0.690	LCS	P	0 - 30
LFB	DDE-p,p'	1.66	LCS	P	0 - 30
LFB	DDT-p,p'	0.165	LCS	P	0 - 30
LFB	Delta-BHC	2.92	LCS	P	0 - 30
LFB	Dicofol	7.99	LCS	P	0 - 30
LFB	Dieldrin	5.69	LCS	P	0 - 30
LFB	Endosulfan I	1.07	LCS	P	0 - 30
LFB	Endosulfan II	1.25	LCS	P	0 - 30
LFB	Endosulfan Sulfate	0.293	LCS	P	0 - 30
LFB	Endrin	4.25	LCS	P	0 - 30
LFB	Endrin Aldehyde	3.54	LCS	P	0 - 30
LFB	Endrin Ketone	0.851	LCS	P	0 - 30
LFB	Ethalfuralin	3.18	LCS	P	0 - 30
LFB	Gamma-BHC	1.83	LCS	P	0 - 30
LFB	Gamma-Chlordane	0.393	LCS	P	0 - 30
LFB	Heptachlor	4.62	LCS	P	0 - 30
LFB	Heptachlor Epoxide	2.35	LCS	P	0 - 30
LFB	Hexachlorobenzene	2.62	LCS	P	0 - 30
LFB	Lambda-Cyhalothrin	2.13	LCS	P	0 - 30
LFB	Methoxychlor	6.93	LCS	P	0 - 30
LFB	Mirex	0.111	LCS	P	0 - 30
LFB	Permethrin	2.79	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P379464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Phenothrin	1.04	LCS	P	0 - 30
LFB	Prallethrin	3.11	LCS	P	0 - 30
LFB	Trans-Nonachlor	1.40	LCS	P	0 - 30
LFB	Trifluralin	0.523	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P379464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159216	Chlordane	0.387	Spike	P	0 - 30
2159216	Toxaphene	2.48	Spike	P	0 - 30
LFB	Chlordane	1.99	LCS	P	0 - 30
LFB	Toxaphene	0.532	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P379179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158377	Acesulfame K	4.80	Spike	P	0 - 30
2158377	AMPA	7.50	Spike	P	0 - 30
2158377	Endothall	8.73	Spike	P	0 - 30
2158377	Glufosinate	23.2	Spike	P	0 - 30
2158377	Glyphosate	15.1	Spike	P	0 - 30
2158377	Sucralose	5.72	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P379284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158935	2,4-D	1.90	Spike	P	0 - 30
2158935	Acetaminophen	2.79	Spike	P	0 - 30
2158935	Acetamiprid	17.1	Spike	P	0 - 30
2158935	Afidopyrophen	8.35	Spike	P	0 - 30
2158935	Bentazon	6.16	Spike	P	0 - 30
2158935	Benzovindiflupyr	2.35	Spike	P	0 - 30
2158935	Carbamazepine	6.89	Spike	P	0 - 30
2158935	Clothianidin	7.99	Spike	P	0 - 30
2158935	Dinotefuran	3.00	Spike	P	0 - 30
2158935	Diuron	0.361	Spike	P	0 - 30
2158935	Fenuron	9.15	Spike	P	0 - 30
2158935	Fluridone	2.45	Spike	P	0 - 30
2158935	Hydrocodone	15.9	Spike	P	0 - 30
2158935	Ibuprofen	11.1	Spike	P	0 - 30
2158935	Imazapyr	1.43	Spike	P	0 - 30
2158935	Imidacloprid	7.13	Spike	P	0 - 30
2158935	Linuron	0.524	Spike	P	0 - 30
2158935	Mandestrobin	3.58	Spike	P	0 - 30
2158935	MCP	3.37	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P379284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158935	Naproxen	7.89	Spike	P	0 - 30
2158935	Primidone	6.05	Spike	P	0 - 30
2158935	Pyraclostrobin	4.86	Spike	P	0 - 30
2158935	Thiamethoxam	2.47	Spike	P	0 - 30
2158935	Tolfenpyrad	1.45	Spike	P	0 - 30
2158935	Triclopyr	2.62	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P379740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159014	Total Alkalinity	0.516	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157633	Fluoride	0.979	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P379591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160032	Organic Carbon	0.833	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2159126
Field Sample ID: G1SW0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.4	P	30 - 160
EPA 8321B	Diuron-d6	108	P	30 - 160
EPA 8321B	Endothall-d6	80.8	P	30 - 160
EPA 8321B	Endothall-d6	80.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	95.4	P	30 - 160
EPA 8321B	Primidone-d5	132	P	30 - 160
EPA 8321B	Sucralose-d6	31.7	P	30 - 160
EPA 8321B	Sucralose-d6	31.7	P	30 - 160

Lab Sample ID: 2159143
Field Sample ID: G1SW0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	76.3	P	44 - 112
EPA 8270E	Tetrachloro-m-xylene	58.5	P	34 - 106
EPA 8276	Decachlorobiphenyl	63.7	P	26 - 97.0
EPA 8276	PCNB	83.4	P	38 - 141

Lab Sample ID: 2159144
Field Sample ID: G1SW0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	94.9	P	72 - 135
EPA 8270E	Terbufos-d10	91.7	P	57 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97656

Included Lab Sample IDs: 2159092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97683

Included Lab Sample IDs: 2159091

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97703

Included Lab Sample IDs: 2159090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97785

Included Lab Sample IDs: 2159091

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

Reference Method: SM 5310 B-2011

Run ID: A97799

Included Lab Sample IDs: 2159091

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

Reference Method: EPA 8270E

Run ID: A97815

Included Lab Sample IDs: 2159144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	99.1		P	80 - 120
Alachlor	99.9		P	80 - 120
Ametryn	117		P	80 - 120
Atrazine	96.8		P	80 - 120
Atrazine Desethyl	120		P	80 - 120
Azinphos Methyl	102		P	80 - 120
Bromacil	105		P	80 - 120
Butylate	96.4		P	80 - 120
Carbophenothion	98.5		P	80 - 120
Chlorpyrifos Ethyl	97.2		P	80 - 120
Chlorpyrifos Methyl	95.1		P	80 - 120
Cyanazine	103		P	80 - 120
Demeton	99.9		P	80 - 120
Diazinon	104		P	80 - 120
Dimethenamid	100		P	80 - 120
Disulfoton	98.1		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A97815
 Included Lab Sample IDs: 2159144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dithiopyr	105		P	80 - 120
EPTC	99.2		P	80 - 120
Ethion	94.9		P	80 - 120
Ethoprop	98.5		P	80 - 120
Fenamiphos	97.9		P	80 - 120
Fipronil	97.4		P	80 - 120
Fipronil Desulfinyl	101		P	80 - 120
Fipronil Sulfide	98.4		P	80 - 120
Fipronil Sulfone	95.8		P	80 - 120
Flumioxazin	91.2		P	80 - 120
Fonofos	98.9		P	80 - 120
Hexazinone	101		P	80 - 120
Imazalil	101		P	80 - 120
Malathion	92.3		P	80 - 120
Metaxyl	100		P	80 - 120
Metolachlor	107		P	80 - 120
Metribuzin	101		P	80 - 120
Mevinphos	85.9		P	80 - 120
Molinate	98.3		P	80 - 120
Norflurazon	104		P	80 - 120
Oxadiazon	109		P	80 - 120
Parathion Ethyl	97.7		P	80 - 120
Parathion Methyl	91.1		P	80 - 120
Pendimethalin	99.2		P	80 - 120
Phorate	100		P	80 - 120
Prodiamine	97.3		P	80 - 120
Prometon	104		P	80 - 120
Prometryn	106		P	80 - 120
Pronamide	97.5		P	80 - 120
Propiconazole	103		P	80 - 120
Simazine	98.8		P	80 - 120
Sulfentrazone	106		P	80 - 120
Tebuconazole	106		P	80 - 120
Terbufos	99.0		P	80 - 120
Terbuthylazine	101		P	80 - 120

Reference Method: EPA 8321B
 Run ID: A97817
 Included Lab Sample IDs: 2159126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	60.7	60.5	P/P	60 - 160
Endothall	97.1	101	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A97819
 Included Lab Sample IDs: 2159126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	75.4	71.3	P/P	60 - 160
Glufosinate	96.6	96.6	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97819
Included Lab Sample IDs: 2159126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	108	105	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A97843
Included Lab Sample IDs: 2159091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A97845
Included Lab Sample IDs: 2159090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A97845
Included Lab Sample IDs: 2159090

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A97896
Included Lab Sample IDs: 2159090

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

Reference Method: EPA 8321B
Run ID: A97908
Included Lab Sample IDs: 2159126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	107	122	P/P	60 - 160

Reference Method: EPA 8276
Run ID: A97911
Included Lab Sample IDs: 2159143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.5		P	80 - 120
Toxaphene	98.0		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97913
Included Lab Sample IDs: 2159091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97940

Included Lab Sample IDs: 2159153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.4	97.6	P/P	90 - 110
Magnesium	98.0	98.7	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A97969

Included Lab Sample IDs: 2159143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.0		P	80 - 120
Alpha-BHC	93.4		P	80 - 120
Alpha-Chlordane	101		P	80 - 120
Beta-BHC	111		P	80 - 120
Beta-Cyfluthrin	96.4		P	80 - 120
Bifenthrin	98.8		P	80 - 120
Chlorothalonil	104		P	80 - 120
Cis-Nonachlor	100		P	80 - 120
Cypermethrin	97.6		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	99.1		P	80 - 120
DDE-p,p'	99.4		P	80 - 120
DDT-p,p'	98.3		P	80 - 120
Delta-BHC	105		P	80 - 120
Dicofol	101		P	80 - 120
Dieldrin	101		P	80 - 120
Endosulfan I	106		P	80 - 120
Endosulfan II	102		P	80 - 120
Endosulfan Sulfate	104		P	80 - 120
Endrin	99.4		P	80 - 120
Endrin Aldehyde	112		P	80 - 120
Endrin Ketone	103		P	80 - 120
Ethalfuralin	99.9		P	80 - 120
Gamma-BHC	106		P	80 - 120
Gamma-Chlordane	99.6		P	80 - 120
Heptachlor	99.7		P	80 - 120
Heptachlor Epoxide	101		P	80 - 120
Hexachlorobenzene	100		P	80 - 120
Lambda-Cyhalothrin	94.7		P	80 - 120
Methoxychlor	100		P	80 - 120
Mirex	98.4		P	80 - 120
Permethrin	94.0		P	80 - 120
Phenothrin	91.0		P	80 - 120
Prallethrin	104		P	80 - 120
Trans-Nonachlor	100		P	80 - 120
Trifluralin	99.0		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97989

Included Lab Sample IDs: 2159153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	101	103	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98040

Included Lab Sample IDs: 2159153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	101	P/P	90 - 110
Antimony	94.9	94.3	P/P	90 - 110
Arsenic	99.6	99.2	P/P	90 - 110
Cadmium	95.8	94.4	P/P	90 - 110
Chromium	98.0	95.5	P/P	90 - 110
Copper	104	103	P/P	90 - 110
Lead	96.2	96.0	P/P	90 - 110
Nickel	104	103	P/P	90 - 110
Selenium	98.6	96.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98066

Included Lab Sample IDs: 2159126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	88.6	P/P	50 - 150
Acetaminophen	149	73.4	P/P	60 - 160
Acetamiprid	120	105	P/P	50 - 150
Afidopyropen	102	89.3	P/P	50 - 150
Bentazon	77.9	130	P/P	50 - 160
Benzovindiflupyr	103	90.3	P/P	50 - 150
Carbamazepine	106	90.6	P/P	60 - 150
Clothianidin	125	108	P/P	60 - 150
Dinotefuran	142	113	P/P	50 - 150
Diuron	134	102	P/P	60 - 150
Fenuron	125	115	P/P	60 - 150
Fluridone	104	97.2	P/P	60 - 160
Hydrocodone	144	111	P/P	60 - 150
Ibuprofen	90.4	110	P/P	50 - 160
Imazapyr	76.1	103	P/P	50 - 150
Imidacloprid	139	108	P/P	60 - 150
Linuron	138	110	P/P	60 - 150
Mandestrobin	112	110	P/P	50 - 150
MCPP	82.0	83.7	P/P	50 - 150
Naproxen	104	87.4	P/P	50 - 160
Primidone	125	101	P/P	60 - 150
Pyraclostrobin	98.9	93.1	P/P	60 - 150
Thiamethoxam	148	104	P/P	50 - 150
Tolfenpyrad	119	100	P/P	60 - 150
Triclopyr	83.9	90.7	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98137

Included Lab Sample IDs: 2159153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.8	94.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98187

Included Lab Sample IDs: 2159153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	94.2	90.3	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			Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						6.30	
EPA 200.7 Rev. 4.4	Iron	108		98.3	101	98.8		2.24
	Magnesium	103						4.67
	Zinc	106		106	104	102		1.60
EPA 200.8 Rev. 5.4	Aluminum	93.4		104	106	116		2.35
	Antimony	93.5		97.5	101	102		3.87
	Arsenic	91.2		110	110	113		0.749
	Cadmium	92.4		97.0	101	97.8		4.46
	Chromium	93.8		97.9	104	98.1		5.67
	Copper	95.0		105	110	116		4.13
	Lead	91.8		101	104	107		2.54
	Nickel	93.5		108	113	116		4.35
	Selenium	89.1		103	104	102		1.29
	Silver	99.2		101	104	103		3.07
	Thallium	100		112	106	105		0.549
EPA 300.0 Rev. 2.1	Bromide	99.7		96.2	97.4	96.5		0.853
EPA 350.1 Rev. 2.0	Ammonia-N	100		101	101			0.398
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5		102	99.4			2.42
EPA 353.2 Rev. 2.0	NO2NO3-N	101		99.0	101			2.00
EPA 365.1 Rev. 2.0	Total-P	103		98.2	98.8			0.667
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		93.2	90.5			2.35
EPA 8270E	Acetochlor	99.5	94.5	101	96.3	5.23		4.82
	Alachlor	99.0	94.9	103	97.8	4.30		4.86
	Aldrin	36.4	34.7	56.0	56.7	4.57		1.11
	Alpha-BHC	79.5	78.2	79.3	80.8	1.69		1.89
	Alpha-Chlordane	84.0	81.6	89.3	86.1	2.96		3.68
	Ametryn	103	116	101	98.3	12.1		2.56
	Atrazine	100	101			0.993		0.914
	Atrazine Desethyl	85.0	80.3	60.9	84.6	5.76		32.6
	Azinphos Methyl	133	111	125	122	18.7		2.79
	Beta-BHC	109	111	115	116	1.65		1.56
	Beta-Cyfluthrin	101	89.0	102	103	12.9		0.782
	Bifenthrin	79.6	81.2	86.1	85.7	2.02		0.444
	Bromacil	89.5	99.6	88.2	78.7	10.6		6.53
	Butylate	48.8	60.6	32.5	50.9	21.6		44.1
	Carbophenothion	104	108	110	101	4.56		8.54
	Chlorothalonil	114	102	35.9	44.6	11.1		21.6
	Chlorpyrifos Ethyl	104	103	123	108	0.380		12.8
	Chlorpyrifos Methyl	97.9	92.9	103	99.9	5.19		3.51
	Cis-Nonachlor	87.8	86.7	90.5	90.0	1.24		0.498
	Cyanazine	127	99.0	106	102	24.5		3.58
	Cypermethrin	83.1	85.5	91.7	94.5	2.85		3.09
	Dacthal	90.0	88.5	90.9	89.7	1.75		1.23
	DDD-p,p'	89.7	90.3	91.3	91.8	0.690		0.494
	DDE-p,p'	81.7	80.3	87.6	85.8	1.66		2.10
	DDT-p,p'	76.6	76.7	81.8	82.3	0.165		0.674
	Delta-BHC	140	136	146	142	2.92		2.12
	Demeton	78.6	56.8	85.9	87.5	32.1		1.84
	Diazinon	91.9	89.8	97.0	93.7	2.31		3.38
	Dicofol	97.9	106	103	91.6	7.99		11.9
	Dieldrin	95.3	90.1	103	97.2	5.69		5.32
	Dimethenamid	92.4	94.4	100	94.3	2.12		5.93
	Disulfoton	87.6	65.7	90.2	89.5	28.6		0.861
	Dithiopyr	97.4	98.5	99.8	92.7	1.16		6.97

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Endosulfan I	95.7	96.7	104	92.0	1.07	12.2
	Endosulfan II	97.5	96.3	99.2	98.3	1.25	0.888
	Endosulfan Sulfate	97.1	96.9	98.3	101	0.293	2.97
	Endrin	91.7	87.9	91.4	92.9	4.25	1.59
	Endrin Aldehyde	106	102	95.1	87.6	3.54	8.23
	Endrin Ketone	94.5	95.3	96.7	96.3	0.851	0.387
	EPTC	46.5	57.9	29.1	41.4	21.8	34.9
	Ethalfuralin	73.6	71.3	75.5	74.4	3.18	1.42
	Ethion	98.9	107	121	107	7.62	12.1
	Ethoprop	87.0	79.0	95.7	96.1	9.55	0.412
	Fenamiphos	105	102	100	94.3	2.54	6.01
	Fipronil	87.5	108	109	100	21.2	8.25
	Fipronil Desulfinyl	94.6	107	110	97.4	12.8	12.2
	Fipronil Sulfide	88.8	107	112	98.5	18.9	12.6
	Fipronil Sulfone	95.4	104	108	90.8	8.42	15.0
	Flumioxazin	157	161	177	174	2.02	1.43
	Fonofos	93.4	77.1	93.0	85.8	19.1	8.11
	Gamma-BHC	103	101	106	107	1.83	1.26
	Gamma-Chlordane	78.7	79.0	83.9	83.9	0.393	0.0441
	Heptachlor	68.7	65.6	69.7	72.7	4.62	4.17
	Heptachlor Epoxide	87.5	85.4	91.6	91.2	2.35	0.434
	Hexachlorobenzene	63.9	62.2	65.4	66.1	2.62	1.08
	Hexazinone	96.5	116			18.1	2.10
	Imazalil	94.4	90.8	66.8	210	3.84	103
	Lambda-Cyhalothrin	91.6	89.7	97.6	97.1	2.13	0.432
	Malathion	109	111	115	104	2.14	7.70
	Metalaxyl	106	101	105	100	5.64	4.64
	Methoxychlor	82.0	87.9	89.5	87.0	6.93	2.75
	Metolachlor	92.3	94.5			2.33	0.666
	Metribuzin	104	104			0.236	5.83
	Mevinphos	79.5	69.5	83.8	86.7	13.5	3.40
	Mirex	64.8	64.9	72.3	72.7	0.111	0.533
	Molinate	66.0	63.7	57.2	68.8	3.45	18.4
	Norflurazon	91.8	109	106	85.4	17.2	14.3
	Oxadiazon	95.2	107	96.3	88.1	11.3	7.41
	Parathion Ethyl	95.4	95.5	108	97.6	0.157	10.3
	Parathion Methyl	95.9	96.4	109	105	0.529	3.53
	Pendimethalin	93.1	94.3	110	101	1.32	8.53
	Permethrin	72.0	74.0	81.2	81.7	2.79	0.573
	Phenothrin	42.9	42.5	65.6	65.5	1.04	0.205
	Phorate	90.0	75.7	82.6	86.5	17.3	4.55
	Prallethrin	53.6	52.0	64.3	63.0	3.11	1.95
	Prodiamine	104	93.8	110	76.7	10.4	35.8
	Prometon	94.8	98.6	89.1	93.4	3.91	4.70
	Prometryn	102	103	106	99.8	1.77	6.20
	Pronamide	92.7	104	99.4	108	11.4	7.96
	Propiconazole	99.8	117	112	111	15.9	0.837
	Simazine	101	101	119	107	0.173	10.9
	Sulfentrazone	70.2	99.9	100	90.6	34.9	10.3
	Tebuconazole	59.8	103	97.4	76.4	53.0	22.2
	Terbufos	92.6	79.5	97.9	98.6	15.2	0.749
	Terbuthylazine	96.0	98.0	102	95.1	2.05	6.68
	Trans-Nonachlor	80.9	79.8	86.1	84.9	1.40	1.42
	Trifluralin	74.3	73.9	76.7	77.0	0.523	0.438

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8276	Chlordane	100	102	74.2	74.6	1.99	0.387
	Toxaphene	99.2	99.7	99.9	102	0.532	2.48
EPA 8321B	2,4-D	134		132	135		1.90
	Acesulfame K	95.5		79.3	75.2		4.80
	Acetaminophen	94.3		104	101		2.79
	Acetamiprid	91.3		98.3	82.8		17.1
	Afidopyropen	96.5		110	101		8.35
	AMPA	98.1		83.7	77.7		7.50
	Bentazon	89.5		76.2	81.1		6.16
	Benzovindiflupyr	85.5		83.9	82.0		2.35
	Carbamazepine	96.6		85.7	91.8		6.89
	Clothianidin	106		112	104		7.99
	Dinotefuran	107		130	126		3.00
	Diuron	96.5		83.6	83.9		0.361
	Endothall	86.8		106	97.5		8.73
	Fenuron	104		89.5	81.7		9.15
	Fluridone	101		104	107		2.45
	Glufosinate	95.0		195	246		23.2
	Glyphosate	93.1		183	213		15.1
	Hydrocodone	105		120	102		15.9
	Ibuprofen	87.0		87.9	78.7		11.1
	Imazapyr	72.8		102	104		1.43
	Imidacloprid	120		157	169		7.13
	Linuron	84.6		81.1	81.5		0.524
	Mandestrobin	91.0		87.4	90.5		3.58
	MCPP	145		149	154		3.37
	Naproxen	112		139	129		7.89
	Primidone	104		97.0	103		6.05
	Pyraclostrobin	78.1		62.9	66.0		4.86
	Sucralose	113		108	101		5.72
	Thiamethoxam	93.8		142	138		2.47
	Tolfenpyrad	70.0		60.3	59.5		1.45
	Triclopyr	131		122	125		2.62
SM 2320 B-2011	Total Alkalinity	106				0.516	
SM 4500 F-C-2011	Fluoride	97.1		97.3	98.9		0.979
SM 5310 B-2011	Organic Carbon	99.6		101	99.7		0.833

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2159090
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2159153
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2159153
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2159090
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2159091
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2159091
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2159091
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2159091
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2159092
EPA 8270E	Organochlorine pesticides in water matrices by GC/MS-SIM	2159143

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2159144
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2159143
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2159126
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2159126
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2159090
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2159090
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2159090
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2159091

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	02/19/2020			02/19/2020 17:56	Yen Ta	2159090
EPA 200.7 Rev. 4.4	02/19/2020	02/26/2020 17:40	Elliott D. Healy	02/27/2020 21:45	Martin Acosta	2159153
	02/19/2020	02/26/2020 17:40	Elliott D. Healy	02/28/2020 00:44	Martin Acosta	2159153
	02/19/2020	02/26/2020 17:40	Elliott D. Healy	03/04/2020 12:32	Betina Topolski	2159153
EPA 200.8 Rev. 5.4	02/19/2020	02/26/2020 17:40	Elliott D. Healy	03/03/2020 19:13	Justin Cutchin	2159153
	02/19/2020	02/26/2020 17:40	Elliott D. Healy	03/13/2020 13:43	Alexander Thompson	2159153
	02/19/2020	03/09/2020 13:10	Elliott D. Healy	03/11/2020 16:37	Alexander Thompson	2159153
EPA 300.0 Rev. 2.1	02/19/2020			02/27/2020 19:58	Elliott Rodriguez	2159090
EPA 350.1 Rev. 2.0	02/19/2020			02/26/2020 11:15	Ping Hua	2159091
EPA 351.2 Rev. 2.0	02/19/2020	02/21/2020 09:15	Sima Feizi	02/24/2020 19:22	Jhamieka S. Greenwood	2159091
EPA 353.2 Rev. 2.0	02/19/2020			02/20/2020 13:21	Lauren Lees	2159091
EPA 365.1 Rev. 2.0	02/19/2020	02/28/2020 14:20	Yen Ta	03/02/2020 12:14	Lipi Saha	2159091
EPA 365.1 Rev. 2.0 dissolved	02/19/2020			02/19/2020 18:47	Carlos Miranda	2159092
EPA 8270E	02/19/2020	02/21/2020 08:30	Rasheda Ghaffari	03/02/2020 18:25	Michael Poppell	2159143
	02/19/2020	02/21/2020 09:00	Fe-Val Siddell	02/24/2020 18:58	Vandana T. Nagar	2159144
EPA 8276	02/19/2020	02/21/2020 08:30	Rasheda Ghaffari	02/28/2020 03:51	Michael Poppell	2159143
EPA 8321B	02/19/2020	02/19/2020 16:00	Rebecca Ware	02/20/2020 13:24	Rebecca Ware	2159126
	02/19/2020	02/19/2020 16:00	Rebecca Ware	02/21/2020 00:10	Rebecca Ware	2159126
	02/19/2020	02/19/2020 16:00	Rebecca Ware	02/27/2020 01:41	Rebecca Ware	2159126
	02/19/2020	02/23/2020 09:00	Hoor Shaik	03/06/2020 10:41	Juyoung Kim	2159126
SM 2320 B-2011	02/19/2020			02/26/2020 02:20	Dale L. Simmons	2159090
SM 2540 D-2011	02/19/2020			02/24/2020 15:24	Yijie Li	2159090
SM 4500 F-C-2011	02/19/2020			02/25/2020 23:06	Dale L. Simmons	2159090
SM 5310 B-2011	02/19/2020			02/25/2020 08:30	Madeline Funaro	2159091