

Chemical Analysis Report

WAS-SECT-2020-10-19-01

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

Event Description: **Wakulla BMAP**
Request ID: **RQ-2020-10-19-16**
Customer: **WAS-SECT**
Project ID: **BMAP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 06-NOV-2020 17:14



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: Wakulla River at Boat Tram

Collection Date/Time: 10/19/2020 11:58

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203271	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P388978	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P389372	
		Sulfate	10		mg SO4/L	P389375	
	SM 2120 B-2011	Color (true)	19	A	PCU	P388983	
	SM 2320 B-2011	Total Alkalinity	146		mg CaCO3/L	P389112	
	SM 2540 C-2011	TDS	182	A	mg/L	P389381	
	SM 2540 D-2011	TSS	2	UA	mg/L	P389309	
2203272	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P389117	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P389199	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P389092	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P389016	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P389174	
2203273	SM 5310 B-2011	Organic Carbon	1.9		mg C/L	P389068	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P388987	
2203277	EPA 8321B	2,4-D	0.0020	U	ug/L	P388895	
		Acesulfame K**	0.10	UJ	ug/L	P389065	MS
		AMPA**	0.10	U	ug/L	P389065	
		Sucralose**	0.038	I	ug/L	P389065	
		Acetaminophen**	0.0080	U	ug/L	P388895	
		Endothall**	0.25	U	ug/L	P389065	
		Acetamiprid**	0.0020	U	ug/L	P388895	
		Glufosinate**	0.10	U	ug/L	P389065	
		Glyphosate**	0.10	U	ug/L	P389065	
		Afidopyropen**	0.0020	U	ug/L	P388895	
		Bentazon	8.0E-04	U	ug/L	P388895	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P388895	
		Carbamazepine**	8.0E-04	U	ug/L	P388895	
		Clothianidin**	0.0020	U	ug/L	P388895	
		Dinotefuran**	0.0020	U	ug/L	P388895	
		Diuron	0.0020	U	ug/L	P388895	MS, RPD
		Fenuron	0.016	U	ug/L	P388895	
		Fluridone**	8.0E-04	U	ug/L	P388895	
		Imazapyr**	0.015	I	ug/L	P388895	MS
		Hydrocodone**	0.0020	U	ug/L	P388895	
		Ibuprofen**	0.020	U	ug/L	P388895	
		Imidacloprid	0.0020	U	ug/L	P388895	
		Linuron	0.0040	U	ug/L	P388895	
		Mandestrobin**	0.0020	U	ug/L	P388895	
		MCP	0.0020	U	ug/L	P388895	
		Naproxen**	0.0080	U	ug/L	P388895	MS
		Primidone**	0.0040	U	ug/L	P388895	RPD
		Pyraclostrobin**	0.0020	U	ug/L	P388895	
		Thiamethoxam**	0.0020	U	ug/L	P388895	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203277	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P388895	
		Triclopyr**	0.0040	U	ug/L	P388895	
2203278	EPA 200.7 Rev. 4.4	Barium	10.5		ug/L	P388938	
		Calcium	48.9		mg/L	P388938	
		Iron	32	I	ug/L	P388938	
		Magnesium	9.77		mg/L	P388938	
		Potassium	0.57	I	mg/L	P388938	
		Sodium	5.5		mg/L	P388938	
		Strontium	112		ug/L	P388938	
		Tin	3.0	U	ug/L	P388938	
		Titanium	0.82	I	ug/L	P388938	
		Vanadium	2.3	I	ug/L	P388938	
		Zinc	5.0	U	ug/L	P388938	
	EPA 200.8 Rev. 5.4	Aluminum	25		ug/L	P388938	
		Antimony	0.050	U	ug/L	P388938	
		Arsenic	0.61		ug/L	P388938	
		Beryllium	0.010	U	ug/L	P388938	
		Boron**	16.8		ug/L	P388938	
		Cadmium	0.020	U	ug/L	P388938	
		Chromium	0.72	I	ug/L	P388938	
		Cobalt	0.023	I	ug/L	P388938	
		Copper	0.40	U	ug/L	P388938	
		Lead	0.20	U	ug/L	P388938	
		Manganese	2.08		ug/L	P388938	
		Molybdenum	1.35		ug/L	P388938	
		Nickel	0.50	U	ug/L	P388938	
		Selenium	0.48	I	ug/L	P388938	
		Silver	0.010	U	ug/L	P388938	
		Thallium	0.10	U	ug/L	P388938	
	SM 2340B	Hardness	162		mg/L	P388938	
2203279	EPA 8270E	Acetochlor	0.24	U	ng/L	P388906	
		Alachlor	0.24	U	ng/L	P388906	
		Ametryn	0.57	U	ng/L	P388906	
		Atrazine	1.2		ng/L	P388906	
		Atrazine Desethyl	1.4	U	ng/L	P388906	
		Azinphos Methyl	1.9	U	ng/L	P388906	
		Azoxystrobin**	0.48	U	ng/L	P388906	
		Bromacil	0.48	U	ng/L	P388906	
		Butylate	0.38	U	ng/L	P388906	
		Carbophenothion	0.48	U	ng/L	P388906	
		Carfentrazone Ethyl**	0.096	U	ng/L	P388906	
		Chlorpyrifos Ethyl	0.24	UJ	ng/L	P388906	LCS
		Chlorpyrifos Methyl	0.048	U	ng/L	P388906	
		Cyanazine	3.1	U	ng/L	P388906	
		Demeton	1.4	U	ng/L	P388906	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203279	EPA 8270E	Diazinon	0.12	U	ng/L	P388906	
		Difenoconazole**	0.57	U	ng/L	P388906	
		Dimethenamid**	0.096	U	ng/L	P388906	
		Disulfoton	0.48	U	ng/L	P388906	
		Dithiopyr**	0.096	U	ng/L	P388906	
		EPTC	1.2	U	ng/L	P388906	
		Ethion	0.14	U	ng/L	P388906	
		Ethoprop	0.096	U	ng/L	P388906	
		Fenamiphos	0.48	U	ng/L	P388906	
		Fenbuconazole**	0.12	U	ng/L	P388906	
		Fipronil	0.24	U	ng/L	P388906	
		Fipronil Desulfinyl**	0.12	U	ng/L	P388906	
		Fipronil Sulfide	0.14	U	ng/L	P388906	
		Fipronil Sulfone	0.14	U	ng/L	P388906	
		Fluazifop-P-butyl**	0.096	U	ng/L	P388906	
		Fludioxonil**	0.12	U	ng/L	P388906	
		Flumioxazin**	1.7	U	ng/L	P388906	
		Flutolanil**	0.096	U	ng/L	P388906	
		Fluxapyroxad**	0.096	U	ng/L	P388906	
		Fonofos	0.19	U	ng/L	P388906	
		Hexazinone	0.71	I	ng/L	P388906	
		Imazalil**	0.72	UJ	ng/L	P388906	RPD
		Iprodione**	0.57	U	ng/L	P388906	
		Malathion	0.33	U	ng/L	P388906	
		Metalaxyl	0.72	U	ng/L	P388906	
		Metolachlor	0.48	U	ng/L	P388906	
		Metribuzin	3.1	U	ng/L	P388906	
		Mevinphos	0.48	U	ng/L	P388906	
		Molinate	0.29	U	ng/L	P388906	
		Myclobutanil**	0.24	U	ng/L	P388906	
		Naled**	1.4	U	ng/L	P388906	
		Norflurazon	0.48	U	ng/L	P388906	
		Oxadiazon	0.096	U	ng/L	P388906	
		Parathion Ethyl	0.24	U	ng/L	P388906	
		Parathion Methyl	0.53	U	ng/L	P388906	
		Pendimethalin	0.96	U	ng/L	P388906	
		Phorate	0.24	U	ng/L	P388906	
		Prodiamine**	0.17	UJ	ng/L	P388906	RPD
		Prometon	0.86	U	ng/L	P388906	
		Prometryn	0.19	U	ng/L	P388906	
		Pronamide**	0.14	U	ng/L	P388906	
		Propiconazole**	0.48	U	ng/L	P388906	
		Pyriproxyfen**	0.12	U	ng/L	P388906	
		Simazine	6.7		ng/L	P388906	
		Sulfentrazone**	0.48	U	ng/L	P388906	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203279	EPA 8270E	Tebuconazole**	0.48	U	ng/L	P388906	
		Terbufos	0.096	U	ng/L	P388906	
		Terbuthylazine	0.41	U	ng/L	P388906	
	EPA 8270E dissolved	Oxyfluorfen**	0.14	U	ng/L	P388906	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

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

EPA 8270E dissolved: MS accuracy for simazine not assessed due to high content of this parameter in the sample spiked. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388978

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388938

Component	Result	Code	Units
Barium	1.0	U	ug/L
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388938

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389372

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389375

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P389199

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P389092

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P389016

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P389174

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388987

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

Reference Method: EPA 8270E
 Batch ID: P388906

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
Azoxystrobin	0.50	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Carbophenothion	0.50	U	ng/L
Carfentrazone Ethyl	0.10	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
Difenoconazole	0.60	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P388906

Component	Result	Code	Units
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fenbuconazole	0.12	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
Fluazifop-P-butyl	0.10	U	ng/L
Fludioxonil	0.12	U	ng/L
Flumioxazin	1.8	U	ng/L
Flutolanil	0.10	U	ng/L
Fluxapyroxad	0.10	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Imazalil	0.75	U	ng/L
Iprodione	0.60	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
Molinate	0.30	U	ng/L
Myclobutanil	0.25	U	ng/L
Naled	1.5	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
Pyriproxyfen	0.12	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 dissolved

Batch ID: P388906

Component	Result	Code	Units
Oxyfluorfen	0.15	U	ng/L

Reference Method: EPA 8321B

Batch ID: P388895

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B**Batch ID: P388895**

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
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B**Batch ID: P389065**

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: SM 2120 B-2011**Batch ID: P388983**

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011**Batch ID: P389112**

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P389381

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P389309

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P389117

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P389068

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: P388938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	102		P	85 - 115
Sodium	99.3		P	85 - 115
Strontium	102		P	85 - 115
Tin	104		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P388938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	99.1		P	85 - 115
Beryllium	94.3		P	85 - 115
Boron	97.9		P	85 - 115
Cadmium	97.4		P	85 - 115
Chromium	95.3		P	85 - 115
Cobalt	101		P	85 - 115
Copper	97.7		P	85 - 115
Lead	94.2		P	85 - 115
Manganese	96.5		P	85 - 115
Molybdenum	96.1		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	96.5		P	85 - 115
Silver	97.2		P	85 - 115
Thallium	97.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P389372

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P389375

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P389199

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P389092

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P389016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P389174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P388987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.5		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P388906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	91.1	90.6	P/P	71 - 122
Alachlor	88.7	89.7	P/P	70 - 121
Ametryn	94.9	97.1	P/P	49 - 137
Atrazine	93.7	93.7	P/P	76 - 125
Atrazine Desethyl	90.9	92.6	P/P	31 - 144
Azinphos Methyl	123	123	P/P	67 - 150
Azoxystrobin	90.7	113	P/P	70 - 170
Bromacil	78.0	80.7	P/P	36 - 121
Butylate	48.4	41.8	P/P	33 - 88.0
Carbophenothion	91.5	81.1	P/P	66 - 116
Carfentrazone Ethyl	96.2	91.4	P/P	50 - 150
Chlorpyrifos Ethyl	87.4	72.6	P/F	73 - 117
Chlorpyrifos Methyl	88.7	84.5	P/P	68 - 121
Cyanazine	144	143	P/P	20 - 250
Demeton	84.7	81.4	P/P	30 - 123
Diazinon	90.6	93.2	P/P	70 - 128
Difenoconazole	73.9	87.1	P/P	50 - 150
Dimethenamid	87.7	83.9	P/P	66 - 122
Disulfoton	77.0	77.8	P/P	46 - 124
Dithiopyr	87.2	85.0	P/P	69 - 122
EPTC	49.2	40.4	P/P	31 - 90.0
Ethion	83.3	70.1	P/P	45 - 135
Ethoprop	83.5	81.7	P/P	59 - 118
Fenamiphos	80.9	82.3	P/P	30 - 136
Fenbuconazole	105	106	P/P	50 - 150
Fipronil	96.8	94.3	P/P	57 - 127
Fipronil Desulfinyl	92.0	91.0	P/P	51 - 122
Fipronil Sulfide	77.3	84.6	P/P	57 - 119

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P388906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fipronil Sulfone	75.5	89.9	P/P	51 - 119
Fluazifop-P-butyl	89.5	83.4	P/P	50 - 150
Fludioxonil	90.4	89.7	P/P	50 - 150
Flumioxazin	139	155	P/P	20 - 250
Flutolanil	90.9	87.0	P/P	50 - 150
Fluxapyroxad	88.1	87.8	P/P	50 - 150
Fonofos	81.9	77.6	P/P	60 - 120
Hexazinone	84.3	83.7	P/P	57 - 142
Imazalil	101	110	P/P	30 - 139
Iprodione	85.7	83.8	P/P	50 - 150
Malathion	88.6	86.9	P/P	67 - 128
Metalaxyl	99.0	96.1	P/P	21 - 148
Metolachlor	91.9	91.0	P/P	70 - 120
Metribuzin	105	107	P/P	20 - 250
Mevinphos	82.0	68.4	P/P	47 - 116
Molinate	66.4	62.5	P/P	41 - 99.0
Myclobutanil	94.9	91.2	P/P	50 - 150
Naled	49.1	46.6	P/P	38 - 97.0
Norflurazon	91.7	93.8	P/P	54 - 127
Oxadiazon	85.2	81.7	P/P	65 - 122
Parathion Ethyl	87.4	83.0	P/P	71 - 113
Parathion Methyl	92.6	89.3	P/P	73 - 129
Pendimethalin	82.9	69.1	P/P	63 - 130
Phorate	83.1	76.0	P/P	48 - 118
Prodiamine	140	103	P/P	20 - 144
Prometon	91.5	86.6	P/P	53 - 120
Prometryn	92.9	92.4	P/P	63 - 119
Pronamide	93.3	96.5	P/P	81 - 122
Propiconazole	88.9	84.7	P/P	62 - 124
Pyriproxyfen	81.8	72.3	P/P	50 - 150
Simazine	92.9	91.2	P/P	77 - 129
Sulfentrazone	90.1	92.0	P/P	20 - 137
Tebuconazole	55.9	52.8	P/P	20 - 118
Terbufos	83.1	78.2	P/P	61 - 119
Terbuthylazine	92.9	92.6	P/P	75 - 119

Reference Method: EPA 8270E dissolved

Batch ID: P388906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Oxyfluorfen	118	103	P/P	50 - 150

Reference Method: EPA 8321B

Batch ID: P388895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	45.5		P	30 - 160
Acetaminophen	53.8		P	30 - 160
Acetamiprid	61.5		P	30 - 160
Afidopyropen	50.6		P	30 - 160
Bentazon	48.3		P	30 - 160
Benzovindiflupyr	65.0		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P388895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	63.9		P	30 - 160
Clothianidin	101		P	30 - 160
Dinotefuran	84.8		P	30 - 160
Diuron	70.2		P	30 - 160
Fenuron	100		P	30 - 160
Fluridone	83.0		P	30 - 160
Hydrocodone	79.0		P	30 - 160
Ibuprofen	48.4		P	30 - 160
Imazapyr	52.0		P	30 - 160
Imidacloprid	77.2		P	30 - 160
Linuron	61.1		P	30 - 160
Mandestrobin	78.8		P	30 - 160
MCPP	58.1		P	30 - 160
Naproxen	45.5		P	30 - 160
Primidone	90.5		P	30 - 160
Pyraclostrobin	58.8		P	30 - 160
Thiamethoxam	85.6		P	30 - 160
Tolfenpyrad	38.6		P	30 - 160
Triclopyr	50.2		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P389065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.7		P	40 - 150
AMPA	101		P	40 - 150
Endothall	83.7		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	95.2		P	40 - 140
Sucralose	116		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P388983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P389112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P389117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	90 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011

Batch ID: P389068

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202972	Barium	105	101	P/P	80 - 120
2202972	Calcium	102		P	80 - 120
2202972	Iron	108	103	P/P	80 - 120
2202972	Magnesium	108	100	P/P	80 - 120
2202972	Potassium	103	97.8	P/P	80 - 120
2202972	Sodium	98.8		P	80 - 120
2202972	Strontium	104	99.9	P/P	80 - 120
2202972	Tin	107	103	P/P	80 - 120
2202972	Titanium	105	102	P/P	80 - 120
2202972	Vanadium	105	100	P/P	80 - 120
2202972	Zinc	104	98.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202972	Aluminum	99.3	99.3	P/P	80 - 120
2202972	Antimony	100	100	P/P	80 - 120
2202972	Arsenic	102	102	P/P	80 - 120
2202972	Beryllium	98.3	98.2	P/P	80 - 120
2202972	Boron	101	100	P/P	80 - 120
2202972	Cadmium	99.3	103	P/P	80 - 120
2202972	Chromium	98.7	98.6	P/P	80 - 120
2202972	Cobalt	103	102	P/P	80 - 120
2202972	Copper	100	99.9	P/P	80 - 120
2202972	Lead	96.1	95.5	P/P	80 - 120
2202972	Manganese	101	99.3	P/P	80 - 120
2202972	Molybdenum	99.8	99.7	P/P	80 - 120
2202972	Nickel	99.8	99.5	P/P	80 - 120
2202972	Selenium	98.8	98.2	P/P	80 - 120
2202972	Silver	97.0	98.0	P/P	80 - 120
2202972	Thallium	99.4	99.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202993	Chloride	102		P	90 - 110
2203190	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202993	Sulfate	102		P	90 - 110
2203190	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203334	Ammonia-N	103	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P389016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203176	NO2NO3-N	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P389174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203191	Total-P	104	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203273	O-Phosphate-P	98.9	98.3	P/P	90 - 110

Reference Method: EPA 8270E
 Batch ID: P388906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203279	Acetochlor	82.2	85.7	P/P	68 - 126
2203279	Alachlor	79.4	84.2	P/P	66 - 125
2203279	Ametryn	80.3	104	P/P	31 - 182
2203279	Atrazine	86.8	92.0	P/P	68 - 137
2203279	Atrazine Desethyl	80.5	88.3	P/P	13 - 161
2203279	Azinphos Methyl	113	110	P/P	54 - 162
2203279	Azoxystrobin	104	106	P/P	70 - 170
2203279	Bromacil	64.1	70.6	P/P	34 - 144
2203279	Butylate	40.8	52.3	P/P	16 - 92.0
2203279	Carbophenothion	84.9	85.6	P/P	30 - 131
2203279	Carfentrazone Ethyl	83.2	83.7	P/P	50 - 150
2203279	Chlorpyrifos Ethyl	83.3	87.3	P/P	63 - 124
2203279	Chlorpyrifos Methyl	81.7	84.6	P/P	64 - 125
2203279	Cyanazine	134	131	P/P	13 - 245
2203279	Demeton	82.3	79.7	P/P	20 - 154
2203279	Diazinon	82.0	87.7	P/P	66 - 141
2203279	Difenoconazole	75.2	78.8	P/P	50 - 150
2203279	Dimethenamid	77.2	79.2	P/P	50 - 130
2203279	Disulfoton	71.0	74.1	P/P	55 - 130
2203279	Dithiopyr	77.4	82.3	P/P	66 - 122
2203279	EPTC	47.1	50.0	P/P	15 - 93.0
2203279	Ethion	76.7	73.7	P/P	15 - 148
2203279	Ethoprop	75.6	80.4	P/P	59 - 126
2203279	Fenamiphos	86.5	81.1	P/P	39 - 137
2203279	Fenbuconazole	94.8	94.3	P/P	50 - 150
2203279	Fipronil	86.5	88.7	P/P	47 - 131
2203279	Fipronil Desulfinyl	82.3	85.9	P/P	43 - 121
2203279	Fipronil Sulfide	76.3	74.0	P/P	29 - 134
2203279	Fipronil Sulfone	92.0	69.6	P/P	19 - 131
2203279	Fluazifop-P-butyl	81.6	86.0	P/P	50 - 150
2203279	Fludioxonil	80.8	84.4	P/P	50 - 150
2203279	Flumioxazin	146	150	P/P	10 - 300
2203279	Flutolanil	78.0	79.7	P/P	50 - 150
2203279	Fluxapyroxad	80.1	79.5	P/P	50 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P388906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203279	Fonofos	77.8	75.2	P/P	62 - 128
2203279	Hexazinone	81.2	82.7	P/P	58 - 154
2203279	Imazalil	78.6	106	P/P	10 - 215
2203279	Iprodione	75.4	75.7	P/P	50 - 150
2203279	Malathion	86.2	86.7	P/P	54 - 135
2203279	Metalaxyl	83.3	90.6	P/P	46 - 136
2203279	Metolachlor	82.7	86.3	P/P	62 - 126
2203279	Metribuzin	105	106	P/P	44 - 277
2203279	Mevinphos	72.7	75.8	P/P	44 - 135
2203279	Molinate	59.5	66.5	P/P	31 - 104
2203279	Myclobutanil	82.7	83.7	P/P	50 - 150
2203279	Naled	47.3	49.2	P/P	33 - 113
2203279	Norflurazon	81.5	84.0	P/P	32 - 134
2203279	Oxadiazon	77.7	81.5	P/P	55 - 123
2203279	Parathion Ethyl	81.6	83.7	P/P	67 - 120
2203279	Parathion Methyl	85.9	88.1	P/P	70 - 140
2203279	Pendimethalin	78.3	81.4	P/P	59 - 145
2203279	Phorate	78.1	80.2	P/P	52 - 127
2203279	Prodiamine	63.3	81.0	P/P	11 - 157
2203279	Prometon	83.0	86.0	P/P	55 - 130
2203279	Prometryn	74.0	79.9	P/P	55 - 127
2203279	Pronamide	88.7	91.6	P/P	66 - 150
2203279	Propiconazole	79.2	76.6	P/P	14 - 178
2203279	Pyriproxyfen	75.4	71.8	P/P	50 - 150
2203279	Sulfentrazone	82.0	82.8	P/P	21 - 144
2203279	Tebuconazole	49.5	49.8	P/P	10 - 122
2203279	Terbufos	77.6	82.0	P/P	65 - 131
2203279	Terbutylazine	85.8	89.4	P/P	63 - 131

Reference Method: EPA 8270E dissolved

Batch ID: P388906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203279	Oxyfluorfen	107	108	P/P	50 - 150

Reference Method: EPA 8321B

Batch ID: P388895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202818	2,4-D	40.9	42.4	P/P	30 - 160
2202818	Acetaminophen	85.6	100	P/P	30 - 160
2202818	Acetamiprid	60.5	51.3	P/P	30 - 160
2202818	Afidopyropen	45.1	34.0	P/P	30 - 160
2202818	Bentazon	20.2	19.8	F/F	30 - 160
2202818	Benzovindiflupyr	57.5	49.0	P/P	30 - 160
2202818	Carbamazepine	49.3	39.3	P/P	30 - 160
2202818	Clothianidin	76.6	66.5	P/P	30 - 160
2202818	Dinotefuran	68.1	63.9	P/P	30 - 160
2202818	Diuron	30.1	20.7	P/F	30 - 160
2202818	Fenuron	61.7	70.3	P/P	30 - 160
2202818	Fluridone	66.7	51.6	P/P	30 - 160
2202818	Hydrocodone	56.5	57.6	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P388895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202818	Ibuprofen	36.6	35.8	P/P	30 - 160
2202818	Imazapyr	28.2	26.5	F/F	30 - 160
2202818	Imidacloprid	112	95.4	P/P	30 - 160
2202818	Linuron	53.7	54.4	P/P	30 - 160
2202818	Mandestrobin	64.4	58.6	P/P	30 - 160
2202818	MCP	63.1	58.3	P/P	30 - 160
2202818	Naproxen	32.2	29.6	P/F	30 - 160
2202818	Primidone	63.4	40.6	P/P	30 - 160
2202818	Pyraclostrobin	57.0	50.1	P/P	30 - 160
2202818	Thiamethoxam	83.0	69.4	P/P	30 - 160
2202818	Tolfenpyrad	35.7	32.5	P/P	30 - 160
2202818	Triclopyr	54.4	46.4	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P389065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203277	Acesulfame K	27.0	27.2	F/F	40 - 150
2203277	AMPA	98.9	96.6	P/P	40 - 150
2203277	Endothall	79.5	82.6	P/P	40 - 150
2203277	Glufosinate	91.9	89.7	P/P	40 - 150
2203277	Glyphosate	82.4	75.2	P/P	40 - 140
2203277	Sucralose	113	100	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P389117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202774	Fluoride	99.1	103	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P389068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203286	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P388978

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203282	Turbidity	6.70	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P388938

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202972	Barium	4.21	Spike	P	0 - 20
2202972	Calcium	3.12	Spike	P	0 - 20
2202972	Iron	3.93	Spike	P	0 - 20
2202972	Magnesium	4.46	Spike	P	0 - 20
2202972	Potassium	3.95	Spike	P	0 - 20
2202972	Sodium	3.19	Spike	P	0 - 20
2202972	Strontium	3.57	Spike	P	0 - 20
2202972	Tin	3.85	Spike	P	0 - 20
2202972	Titanium	2.59	Spike	P	0 - 20
2202972	Vanadium	4.40	Spike	P	0 - 20
2202972	Zinc	5.43	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P388938

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202972	Aluminum	0.0358	Spike	P	0 - 20
2202972	Antimony	0.00951	Spike	P	0 - 20
2202972	Arsenic	0.361	Spike	P	0 - 20
2202972	Beryllium	0.103	Spike	P	0 - 20
2202972	Boron	0.966	Spike	P	0 - 20
2202972	Cadmium	3.29	Spike	P	0 - 20
2202972	Chromium	0.0942	Spike	P	0 - 20
2202972	Cobalt	1.03	Spike	P	0 - 20
2202972	Copper	0.113	Spike	P	0 - 20
2202972	Lead	0.608	Spike	P	0 - 20
2202972	Manganese	1.02	Spike	P	0 - 20
2202972	Molybdenum	0.156	Spike	P	0 - 20
2202972	Nickel	0.316	Spike	P	0 - 20
2202972	Selenium	0.627	Spike	P	0 - 20
2202972	Silver	1.00	Spike	P	0 - 20
2202972	Thallium	0.304	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P389372

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203190	Chloride	0.0490	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203190	Sulfate	0.404	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203334	Ammonia-N	2.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203191	Kjeldahl Nitrogen	1.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203176	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203191	Total-P	2.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203273	O-Phosphate-P	0.476	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P388906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203279	Acetochlor	4.17	Spike	P	0 - 30
2203279	Alachlor	5.89	Spike	P	0 - 30
2203279	Ametryn	26.0	Spike	P	0 - 30
2203279	Atrazine	4.27	Spike	P	0 - 30
2203279	Atrazine Desethyl	9.32	Spike	P	0 - 30
2203279	Azinphos Methyl	2.06	Spike	P	0 - 30
2203279	Azoxystrobin	2.67	Spike	P	0 - 30
2203279	Bromacil	9.64	Spike	P	0 - 30
2203279	Butylate	24.7	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P388906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203279	Carbophenothion	0.806	Spike	P	0 - 30
2203279	Carfentrazone Ethyl	0.595	Spike	P	0 - 30
2203279	Chlorpyrifos Ethyl	4.68	Spike	P	0 - 30
2203279	Chlorpyrifos Methyl	3.44	Spike	P	0 - 30
2203279	Cyanazine	1.99	Spike	P	0 - 30
2203279	Demeton	3.18	Spike	P	0 - 30
2203279	Diazinon	6.69	Spike	P	0 - 30
2203279	Difenoconazole	4.66	Spike	P	0 - 30
2203279	Dimethenamid	2.56	Spike	P	0 - 30
2203279	Disulfoton	4.25	Spike	P	0 - 30
2203279	Dithiopyr	6.17	Spike	P	0 - 30
2203279	EPTC	5.99	Spike	P	0 - 30
2203279	Ethion	4.01	Spike	P	0 - 30
2203279	Ethoprop	6.16	Spike	P	0 - 30
2203279	Fenamiphos	6.43	Spike	P	0 - 30
2203279	Fenbuconazole	0.573	Spike	P	0 - 30
2203279	Fipronil	2.62	Spike	P	0 - 30
2203279	Fipronil Desulfinyl	4.29	Spike	P	0 - 30
2203279	Fipronil Sulfide	3.09	Spike	P	0 - 30
2203279	Fipronil Sulfone	27.7	Spike	P	0 - 30
2203279	Fluazifop-P-butyl	5.23	Spike	P	0 - 30
2203279	Fludioxonil	4.32	Spike	P	0 - 30
2203279	Flumioxazin	3.03	Spike	P	0 - 30
2203279	Flutolanil	2.20	Spike	P	0 - 30
2203279	Fluxapyroxad	0.756	Spike	P	0 - 30
2203279	Fonofos	3.46	Spike	P	0 - 30
2203279	Hexazinone	1.72	Spike	P	0 - 30
2203279	Imazalil	30.0	Spike	F	0 - 30
2203279	Iprodione	0.308	Spike	P	0 - 30
2203279	Malathion	0.590	Spike	P	0 - 30
2203279	Metalaxyl	8.41	Spike	P	0 - 30
2203279	Metolachlor	4.29	Spike	P	0 - 30
2203279	Metribuzin	0.697	Spike	P	0 - 30
2203279	Mevinphos	4.09	Spike	P	0 - 30
2203279	Molinate	11.1	Spike	P	0 - 30
2203279	Myclobutanil	1.22	Spike	P	0 - 30
2203279	Naled	3.87	Spike	P	0 - 30
2203279	Norflurazon	2.99	Spike	P	0 - 30
2203279	Oxadiazon	4.84	Spike	P	0 - 30
2203279	Parathion Ethyl	2.53	Spike	P	0 - 30
2203279	Parathion Methyl	2.50	Spike	P	0 - 30
2203279	Pendimethalin	3.87	Spike	P	0 - 30
2203279	Phorate	2.67	Spike	P	0 - 30
2203279	Prodiamine	24.5	Spike	P	0 - 30
2203279	Prometon	3.58	Spike	P	0 - 30
2203279	Prometryn	7.18	Spike	P	0 - 30
2203279	Pronamide	3.29	Spike	P	0 - 30
2203279	Propiconazole	3.37	Spike	P	0 - 30
2203279	Pyriproxyfen	4.82	Spike	P	0 - 30
2203279	Simazine	1.09	Spike	P	0 - 30
2203279	Sulfentrazone	0.979	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P388906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203279	Tebuconazole	0.774	Spike	P	0 - 30
2203279	Terbufos	5.57	Spike	P	0 - 30
2203279	Terbuthylazine	4.00	Spike	P	0 - 30
LFB	Acetochlor	0.557	LCS	P	0 - 30
LFB	Alachlor	1.08	LCS	P	0 - 30
LFB	Ametryn	2.28	LCS	P	0 - 30
LFB	Atrazine	0.0914	LCS	P	0 - 30
LFB	Atrazine Desethyl	1.91	LCS	P	0 - 30
LFB	Azinphos Methyl	0.330	LCS	P	0 - 30
LFB	Azoxystrobin	21.8	LCS	P	0 - 30
LFB	Bromacil	3.34	LCS	P	0 - 30
LFB	Butylate	14.6	LCS	P	0 - 30
LFB	Carbophenothion	12.1	LCS	P	0 - 30
LFB	Carfentrazone Ethyl	5.12	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	18.5	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	4.89	LCS	P	0 - 30
LFB	Cyanazine	0.446	LCS	P	0 - 30
LFB	Demeton	3.96	LCS	P	0 - 30
LFB	Diazinon	2.84	LCS	P	0 - 30
LFB	Difenoconazole	16.4	LCS	P	0 - 30
LFB	Dimethenamid	4.36	LCS	P	0 - 30
LFB	Disulfoton	1.06	LCS	P	0 - 30
LFB	Dithiopyr	2.58	LCS	P	0 - 30
LFB	EPTC	19.7	LCS	P	0 - 30
LFB	Ethion	17.2	LCS	P	0 - 30
LFB	Ethoprop	2.24	LCS	P	0 - 30
LFB	Fenamiphos	1.80	LCS	P	0 - 30
LFB	Fenbuconazole	1.73	LCS	P	0 - 30
LFB	Fipronil	2.68	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	1.13	LCS	P	0 - 30
LFB	Fipronil Sulfide	9.07	LCS	P	0 - 30
LFB	Fipronil Sulfone	17.4	LCS	P	0 - 30
LFB	Fluazifop-P-butyl	6.98	LCS	P	0 - 30
LFB	Fludioxonil	0.845	LCS	P	0 - 30
LFB	Flumioxazin	11.0	LCS	P	0 - 30
LFB	Flutolanil	4.47	LCS	P	0 - 30
LFB	Fluxapyroxad	0.386	LCS	P	0 - 30
LFB	Fonofos	5.33	LCS	P	0 - 30
LFB	Hexazinone	0.732	LCS	P	0 - 30
LFB	Imazalil	8.49	LCS	P	0 - 30
LFB	Iprodione	2.19	LCS	P	0 - 30
LFB	Malathion	1.96	LCS	P	0 - 30
LFB	Metalaxyl	3.05	LCS	P	0 - 30
LFB	Metolachlor	0.958	LCS	P	0 - 30
LFB	Metribuzin	2.19	LCS	P	0 - 30
LFB	Mevinphos	18.1	LCS	P	0 - 30
LFB	Molinate	6.05	LCS	P	0 - 30
LFB	Myclobutanil	3.99	LCS	P	0 - 30
LFB	Naled	5.30	LCS	P	0 - 30
LFB	Norflurazon	2.24	LCS	P	0 - 30
LFB	Oxadiazon	4.15	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P388906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Parathion Ethyl	5.14	LCS	P	0 - 30
LFB	Parathion Methyl	3.54	LCS	P	0 - 30
LFB	Pendimethalin	18.1	LCS	P	0 - 30
LFB	Phorate	8.88	LCS	P	0 - 30
LFB	Prodiamine	30.1	LCS	F	0 - 30
LFB	Prometon	5.46	LCS	P	0 - 30
LFB	Prometryn	0.558	LCS	P	0 - 30
LFB	Pronamide	3.37	LCS	P	0 - 30
LFB	Propiconazole	4.86	LCS	P	0 - 30
LFB	Pyriproxyfen	12.3	LCS	P	0 - 30
LFB	Simazine	1.78	LCS	P	0 - 30
LFB	Sulfentrazone	2.05	LCS	P	0 - 30
LFB	Tebuconazole	5.76	LCS	P	0 - 30
LFB	Terbufos	6.10	LCS	P	0 - 30
LFB	Terbutylazine	0.342	LCS	P	0 - 30

Reference Method: EPA 8270E dissolved

Batch ID: P388906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203279	Oxyfluorfen	0.813	Spike	P	0 - 30
LFB	Oxyfluorfen	13.6	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P388895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202818	2,4-D	2.97	Spike	P	0 - 30
2202818	Acetaminophen	15.7	Spike	P	0 - 30
2202818	Acetamiprid	16.4	Spike	P	0 - 30
2202818	Afidopyropen	28.0	Spike	P	0 - 30
2202818	Bentazon	0.898	Spike	P	0 - 30
2202818	Benzovindiflupyr	15.9	Spike	P	0 - 30
2202818	Carbamazepine	22.4	Spike	P	0 - 30
2202818	Clothianidin	14.1	Spike	P	0 - 30
2202818	Dinotefuran	6.44	Spike	P	0 - 30
2202818	Diuron	31.8	Spike	F	0 - 30
2202818	Fenuron	13.0	Spike	P	0 - 30
2202818	Fluridone	20.5	Spike	P	0 - 30
2202818	Hydrocodone	2.04	Spike	P	0 - 30
2202818	Ibuprofen	2.25	Spike	P	0 - 30
2202818	Imazapyr	3.05	Spike	P	0 - 30
2202818	Imidacloprid	15.4	Spike	P	0 - 30
2202818	Linuron	1.34	Spike	P	0 - 30
2202818	Mandestrobin	9.44	Spike	P	0 - 30
2202818	MCP	8.05	Spike	P	0 - 30
2202818	Naproxen	8.26	Spike	P	0 - 30
2202818	Primidone	43.7	Spike	F	0 - 30
2202818	Pyraclostrobin	12.9	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P388895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202818	Thiamethoxam	17.7	Spike	P	0 - 30
2202818	Tolfenpyrad	9.44	Spike	P	0 - 30
2202818	Triclopyr	15.9	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P389065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203277	Acesulfame K	0.737	Spike	P	0 - 30
2203277	AMPA	2.38	Spike	P	0 - 30
2203277	Endothall	3.88	Spike	P	0 - 30
2203277	Glufosinate	2.45	Spike	P	0 - 30
2203277	Glyphosate	9.13	Spike	P	0 - 30
2203277	Sucralose	12.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P388983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203271	Color (true)	0.947	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P389112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202774	Total Alkalinity	0.527	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P389381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203271	TDS	6.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P389117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202774	Fluoride	0.928	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P389068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203286	Organic Carbon	0.718	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2203277

Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.9	P	30 - 160
EPA 8321B	Diuron-d6	45.7	P	30 - 160
EPA 8321B	Endothall-d6	86.8	P	30 - 160
EPA 8321B	Endothall-d6	86.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	49.6	P	30 - 160
EPA 8321B	Primidone-d5	70.3	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	30 - 160

Lab Sample ID: 2203279

Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	81.4	P	72 - 135
EPA 8270E	Terbufos-d10	80.7	P	57 - 134
EPA 8270E dissolved	Simazine-d10	81.4	P	72 - 135
EPA 8270E dissolved	Terbufos-d10	80.7	P	57 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101640

Included Lab Sample IDs: 2203271

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

Reference Method: SM 2120 B-2011

Run ID: A101644

Included Lab Sample IDs: 2203271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101645

Included Lab Sample IDs: 2203273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101646

Included Lab Sample IDs: 2203278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	102	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	101	99.1	P/P	90 - 110
Sodium	101	100	P/P	90 - 110
Strontium	100	102	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Titanium	101	102	P/P	90 - 110
Vanadium	101	102	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101657

Included Lab Sample IDs: 2203272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101667

Included Lab Sample IDs: 2203278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.9	98.2	P/P	90 - 110
Antimony	96.5	96.9	P/P	90 - 110
Arsenic	98.7	98.1	P/P	90 - 110
Beryllium	96.9	96.8	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Cadmium	97.1	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101667

Included Lab Sample IDs: 2203278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	92.0	93.8	P/P	90 - 110
Cobalt	97.9	97.9	P/P	90 - 110
Copper	94.9	96.1	P/P	90 - 110
Lead	96.2	97.8	P/P	90 - 110
Manganese	95.1	95.4	P/P	90 - 110
Molybdenum	95.6	96.9	P/P	90 - 110
Nickel	95.3	96.1	P/P	90 - 110
Selenium	96.6	95.9	P/P	90 - 110
Silver	99.3	99.5	P/P	90 - 110
Thallium	94.3	95.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101671

Included Lab Sample IDs: 2203277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	75.7	80.2	P/P	50 - 150
Acetaminophen	98.3	115	P/P	60 - 160
Acetamiprid	117	118	P/P	50 - 150
Afidopyropen	90.2	94.6	P/P	50 - 150
Bentazon	80.7	80.7	P/P	50 - 160
Benzovindiflupyr	99.9	92.9	P/P	50 - 150
Carbamazepine	109	99.5	P/P	60 - 150
Clothianidin	107	100	P/P	60 - 150
Dinotefuran	92.4	94.8	P/P	50 - 150
Diuron	101	100	P/P	60 - 160
Fenuron	106	110	P/P	60 - 150
Fluridone	97.3	101	P/P	60 - 160
Hydrocodone	98.8	100	P/P	60 - 150
Ibuprofen	79.9	80.9	P/P	50 - 160
Imazapyr	112	113	P/P	50 - 160
Imidacloprid	89.6	96.4	P/P	60 - 150
Linuron	62.6	67.6	P/P	60 - 150
Mandestrobin	101	109	P/P	50 - 150
MCPP	70.2	63.7	P/P	50 - 150
Naproxen	83.3	124	P/P	50 - 160
Primidone	82.2	102	P/P	60 - 150
Pyraclostrobin	97.0	90.9	P/P	60 - 150
Thiamethoxam	91.6	90.1	P/P	50 - 150
Tolfenpyrad	76.5	89.6	P/P	60 - 150
Triclopyr	71.7	79.4	P/P	50 - 150

Reference Method: SM 5310 B-2011

Run ID: A101673

Included Lab Sample IDs: 2203272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A101694
Included Lab Sample IDs: 2203271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A101694
Included Lab Sample IDs: 2203271

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

Reference Method: EPA 8321B
Run ID: A101706
Included Lab Sample IDs: 2203277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.9	75.4	P/P	50 - 160
Endothall	87.7	100	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A101728
Included Lab Sample IDs: 2203277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.4	98.0	P/P	50 - 160
Glufosinate	86.2	97.1	P/P	50 - 160
Glyphosate	85.6	93.9	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A101732
Included Lab Sample IDs: 2203272

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A101736
Included Lab Sample IDs: 2203272

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101787
Included Lab Sample IDs: 2203272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.0	93.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A101788
 Included Lab Sample IDs: 2203277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	122	P/P	50 - 160

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A101798
 Included Lab Sample IDs: 2203271

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

Reference Method: EPA 8270E
 Run ID: A101858
 Included Lab Sample IDs: 2203279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	101		P	80 - 120
Alachlor	102		P	80 - 120
Ametryn	101		P	80 - 120
Atrazine	100		P	80 - 120
Atrazine Desethyl	96.7		P	80 - 120
Azinphos Methyl	102		P	80 - 120
Azoxystrobin	93.9		P	80 - 120
Bromacil	99.9		P	80 - 120
Butylate	97.5		P	80 - 120
Carbophenothion	100		P	80 - 120
Carfentrazone Ethyl	103		P	80 - 120
Chlorpyrifos Ethyl	98.7		P	80 - 120
Chlorpyrifos Methyl	94.8		P	80 - 120
Cyanazine	94.8		P	80 - 120
Demeton	96.1		P	80 - 120
Diazinon	102		P	80 - 120
Difenoconazole	95.9		P	80 - 120
Dimethenamid	101		P	80 - 120
Disulfoton	93.1		P	80 - 120
Dithiopyr	103		P	80 - 120
EPTC	98.1		P	80 - 120
Ethion	95.1		P	80 - 120
Ethoprop	94.4		P	80 - 120
Fenamiphos	89.7		P	80 - 120
Fenbuconazole	102		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	99.5		P	80 - 120
Fipronil Sulfide	95.8		P	80 - 120
Fipronil Sulfone	93.7		P	80 - 120
Fluazifop-P-butyl	100		P	80 - 120
Fludioxonil	101		P	80 - 120
Flumioxazin	94.9		P	80 - 120
Flutolanil	101		P	80 - 120
Fluxapyroxad	101		P	80 - 120
Fonofos	97.0		P	80 - 120
Hexazinone	99.7		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270E

Run ID: A101858

Included Lab Sample IDs: 2203279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazalil	101		P	80 - 120
Iprodione	101		P	80 - 120
Malathion	92.2		P	80 - 120
Metalaxyl	103		P	80 - 120
Metolachlor	100		P	80 - 120
Metribuzin	97.9		P	80 - 120
Mevinphos	94.2		P	80 - 120
Molinate	98.2		P	80 - 120
Myclobutanil	103		P	80 - 120
Naled	98.7		P	80 - 120
Norflurazon	98.4		P	80 - 120
Oxadiazon	102		P	80 - 120
Oxyfluorfen	101		P	80 - 120
Parathion Ethyl	95.5		P	80 - 120
Parathion Methyl	91.7		P	80 - 120
Pendimethalin	101		P	80 - 120
Phorate	97.7		P	80 - 120
Prodiamine	102		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	105		P	80 - 120
Pronamide	98.9		P	80 - 120
Propiconazole	102		P	80 - 120
Pyriproxyfen	104		P	80 - 120
Simazine	99.5		P	80 - 120
Sulfentrazone	99.5		P	80 - 120
Tebuconazole	102		P	80 - 120
Terbufos	96.1		P	80 - 120
Terbutylazine	102		P	80 - 120

Reference Method: EPA 8270E dissolved

Run ID: A101858

Included Lab Sample IDs: 2203279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	101		P	80 - 120
Alachlor	102		P	80 - 120
Ametryn	101		P	80 - 120
Atrazine	100		P	80 - 120
Atrazine Desethyl	96.7		P	80 - 120
Azinphos Methyl	102		P	80 - 120
Azoxystrobin	93.9		P	80 - 120
Bromacil	99.9		P	80 - 120
Butylate	97.5		P	80 - 120
Carbophenothion	100		P	80 - 120
Carfentrazone Ethyl	103		P	80 - 120
Chlorpyrifos Ethyl	98.7		P	80 - 120
Chlorpyrifos Methyl	94.8		P	80 - 120
Cyanazine	94.8		P	80 - 120
Demeton	96.1		P	80 - 120
Diazinon	102		P	80 - 120
Difenoconazole	95.9		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270E dissolved

Run ID: A101858

Included Lab Sample IDs: 2203279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dimethenamid	101		P	80 - 120
Disulfoton	93.1		P	80 - 120
Dithiopyr	103		P	80 - 120
EPTC	98.1		P	80 - 120
Ethion	95.1		P	80 - 120
Ethoprop	94.4		P	80 - 120
Fenamiphos	89.7		P	80 - 120
Fenbuconazole	102		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	99.5		P	80 - 120
Fipronil Sulfide	95.8		P	80 - 120
Fipronil Sulfone	93.7		P	80 - 120
Fluazifop-P-butyl	100		P	80 - 120
Fludioxonil	101		P	80 - 120
Flumioxazin	94.9		P	80 - 120
Flutolanil	101		P	80 - 120
Fluxapyroxad	101		P	80 - 120
Fonofos	97.0		P	80 - 120
Hexazinone	99.7		P	80 - 120
Imazalil	101		P	80 - 120
Iprodione	101		P	80 - 120
Malathion	92.2		P	80 - 120
Metaxyl	103		P	80 - 120
Metolachlor	100		P	80 - 120
Metribuzin	97.9		P	80 - 120
Mevinphos	94.2		P	80 - 120
Molinate	98.2		P	80 - 120
Myclobutanil	103		P	80 - 120
Naled	98.7		P	80 - 120
Norflurazon	98.4		P	80 - 120
Oxadiazon	102		P	80 - 120
Oxyfluorfen	101		P	80 - 120
Parathion Ethyl	95.5		P	80 - 120
Parathion Methyl	91.7		P	80 - 120
Pendimethalin	101		P	80 - 120
Phorate	97.7		P	80 - 120
Prodiamine	102		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	105		P	80 - 120
Pronamide	98.9		P	80 - 120
Propiconazole	102		P	80 - 120
Pyriproxyfen	104		P	80 - 120
Simazine	99.5		P	80 - 120
Sulfentrazone	99.5		P	80 - 120
Tebuconazole	102		P	80 - 120
Terbufos	96.1		P	80 - 120
Terbuthylazine	102		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						6.70	
EPA 200.7 Rev. 4.4	Barium	102		105	101			4.21
	Calcium	103		102				3.12
	Iron	106		108	103			3.93
	Magnesium	107		108	100			4.46
	Potassium	102		103	97.8			3.95
	Sodium	99.3		98.8				3.19
	Strontium	102		104	99.9			3.57
	Tin	104		107	103			3.85
	Titanium	102		105	102			2.59
	Vanadium	100		105	100			4.40
	Zinc	101		104	98.3			5.43
EPA 200.8 Rev. 5.4	Aluminum	99.1		99.3	99.3			0.0358
	Antimony	97.7		100	100			0.0095
	Arsenic	99.1		102	102			0.361
	Beryllium	94.3		98.3	98.2			0.103
	Boron	97.9		101	100			0.966
	Cadmium	97.4		99.3	103			3.29
	Chromium	95.3		98.7	98.6			0.0942
	Cobalt	101		103	102			1.03
	Copper	97.7		100	99.9			0.113
	Lead	94.2		96.1	95.5			0.608
	Manganese	96.5		101	99.3			1.02
	Molybdenum	96.1		99.8	99.7			0.156
	Nickel	96.6		99.8	99.5			0.316
	Selenium	96.5		98.8	98.2			0.627
	Silver	97.2		97.0	98.0			1.00
	Thallium	97.6		99.4	99.7			0.304
EPA 300.0 Rev. 2.1	Chloride	102		100	102		0.0490	
	Sulfate	102		99.9	102		0.404	
EPA 350.1 Rev. 2.0	Ammonia-N	102		103	105			2.01
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101						1.36
EPA 353.2 Rev. 2.0	NO2NO3-N	100		96.8				0.0
EPA 365.1 Rev. 2.0	Total-P	108		104	108			2.87
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.5		98.9	98.3			0.476
EPA 8270E	Acetochlor	91.1	90.6	85.7	82.2	0.557		4.17
	Alachlor	88.7	89.7	84.2	79.4	1.08		5.89
	Ametryn	94.9	97.1	104	80.3	2.28		26.0
	Atrazine	93.7	93.7	92.0	86.8	0.0914		4.27
	Atrazine Desethyl	90.9	92.6	80.5	88.3	1.91		9.32
	Azinphos Methyl	123	123	113	110	0.330		2.06
	Azoxystrobin	90.7	113	104	106	21.8		2.67
	Bromacil	78.0	80.7	64.1	70.6	3.34		9.64
	Butylate	48.4	41.8	40.8	52.3	14.6		24.7
	Carbophenothion	91.5	81.1	85.6	84.9	12.1		0.806
	Carfentrazone Ethyl	96.2	91.4	83.7	83.2	5.12		0.595
	Chlorpyrifos Ethyl	87.4	72.6	87.3	83.3	18.5		4.68
	Chlorpyrifos Methyl	88.7	84.5	84.6	81.7	4.89		3.44
	Cyanazine	144	143	131	134	0.446		1.99
	Demeton	84.7	81.4	79.7	82.3	3.96		3.18
	Diazinon	90.6	93.2	87.7	82.0	2.84		6.69
	Difenoconazole	73.9	87.1	78.8	75.2	16.4		4.66
	Dimethenamid	87.7	83.9	79.2	77.2	4.36		2.56
	Disulfoton	77.0	77.8	74.1	71.0	1.06		4.25

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 8270E	Dithiopyr	87.2	85.0	82.3	77.4	2.58		6.17
	EPTC	49.2	40.4	50.0	47.1	19.7		5.99
	Ethion	83.3	70.1	73.7	76.7	17.2		4.01
	Ethoprop	83.5	81.7	80.4	75.6	2.24		6.16
	Fenamiphos	80.9	82.3	81.1	86.5	1.80		6.43
	Fenbuconazole	105	106	94.3	94.8	1.73		0.573
	Fipronil	96.8	94.3	88.7	86.5	2.68		2.62
	Fipronil Desulfinyl	92.0	91.0	85.9	82.3	1.13		4.29
	Fipronil Sulfide	77.3	84.6	74.0	76.3	9.07		3.09
	Fipronil Sulfone	75.5	89.9	69.6	92.0	17.4		27.7
	Fluazifop-P-butyl	89.5	83.4	86.0	81.6	6.98		5.23
	Fludioxonil	90.4	89.7	84.4	80.8	0.845		4.32
	Flumioxazin	139	155	150	146	11.0		3.03
	Flutolanil	90.9	87.0	79.7	78.0	4.47		2.20
	Fluxapyroxad	88.1	87.8	79.5	80.1	0.386		0.756
	Fonofos	81.9	77.6	75.2	77.8	5.33		3.46
	Hexazinone	84.3	83.7	82.7	81.2	0.732		1.72
	Imazalil	101	110	106	78.6	8.49		30.0
	Iprodione	85.7	83.8	75.7	75.4	2.19		0.308
	Malathion	88.6	86.9	86.7	86.2	1.96		0.590
	Metalaxyl	99.0	96.1	90.6	83.3	3.05		8.41
	Metolachlor	91.9	91.0	86.3	82.7	0.958		4.29
	Metribuzin	105	107	106	105	2.19		0.697
	Mevinphos	82.0	68.4	75.8	72.7	18.1		4.09
	Molinate	66.4	62.5	66.5	59.5	6.05		11.1
	Myclobutanil	94.9	91.2	83.7	82.7	3.99		1.22
	Naled	49.1	46.6	49.2	47.3	5.30		3.87
	Norflurazon	91.7	93.8	81.5	84.0	2.24		2.99
	Oxadiazon	85.2	81.7	77.7	81.5	4.15		4.84
	Parathion Ethyl	87.4	83.0	81.6	83.7	5.14		2.53
	Parathion Methyl	92.6	89.3	85.9	88.1	3.54		2.50
	Pendimethalin	82.9	69.1	78.3	81.4	18.1		3.87
	Phorate	83.1	76.0	78.1	80.2	8.88		2.67
	Prodiamine	140	103	63.3	81.0	30.1		24.5
	Prometon	91.5	86.6	83.0	86.0	5.46		3.58
	Prometryn	92.9	92.4	74.0	79.9	0.558		7.18
	Pronamide	93.3	96.5	88.7	91.6	3.37		3.29
	Propiconazole	88.9	84.7	79.2	76.6	4.86		3.37
	Pyriproxyfen	81.8	72.3	75.4	71.8	12.3		4.82
	Simazine	92.9	91.2			1.78		1.09
	Sulfentrazone	90.1	92.0	82.0	82.8	2.05		0.979
	Tebuconazole	55.9	52.8	49.5	49.8	5.76		0.774
	Terbufos	83.1	78.2	77.6	82.0	6.10		5.57
	Terbuthylazine	92.9	92.6	85.8	89.4	0.342		4.00
EPA 8270E dissolved	Oxyfluorfen	118	103	107	108	13.6		0.813
EPA 8321B	2,4-D	45.5		40.9	42.4			2.97
	Acesulfame K	81.7		27.0	27.2			0.737
	Acetaminophen	53.8		85.6	100			15.7
	Acetamiprid	61.5		60.5	51.3			16.4
	Afidopyropen	50.6		45.1	34.0			28.0
	AMPA	101		98.9	96.6			2.38
	Bentazon	48.3		20.2	19.8			0.898
	Benzovindiflupyr	65.0		57.5	49.0			15.9
	Carbamazepine	63.9		49.3	39.3			22.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Clothianidin	101	76.6	66.5			14.1
	Dinotefuran	84.8	68.1	63.9			6.44
	Diuron	70.2	30.1	20.7			31.8
	Endothall	83.7	79.5	82.6			3.88
	Fenuron	100	61.7	70.3			13.0
	Fluridone	83.0	66.7	51.6			20.5
	Glufosinate	100	91.9	89.7			2.45
	Glyphosate	95.2	82.4	75.2			9.13
	Hydrocodone	79.0	56.5	57.6			2.04
	Ibuprofen	48.4	36.6	35.8			2.25
	Imazapyr	52.0	28.2	26.5			3.05
	Imidacloprid	77.2	112	95.4			15.4
	Linuron	61.1	53.7	54.4			1.34
	Mandestrobin	78.8	64.4	58.6			9.44
	MCPP	58.1	63.1	58.3			8.05
	Naproxen	45.5	32.2	29.6			8.26
	Primidone	90.5	63.4	40.6			43.7
	Pyraclostrobin	58.8	57.0	50.1			12.9
	Sucralose	116	113	100			12.1
	Thiamethoxam	85.6	83.0	69.4			17.7
	Tolfenpyrad	38.6	35.7	32.5			9.44
	Triclopyr	50.2	54.4	46.4			15.9
SM 2120 B-2011	Color (true)	99.5				0.947	
SM 2320 B-2011	Total Alkalinity	99.7				0.527	
SM 2540 C-2011	TDS					6.59	
SM 4500 F-C-2011	Fluoride	98.3	99.1	103			0.928
SM 5310 B-2011	Organic Carbon	99.2	100	101			0.718

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2203271
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2203278
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2203278
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2203271
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2203271
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2203272
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2203272
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2203272
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2203272
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2203273
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2203279
EPA 8270E dissolved	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2203279
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2203277
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2203277
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2203271
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2203271
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2203278
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2203271
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2203271

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2203271
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2203272

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	10/19/2020			10/20/2020 16:02	Yen Ta	2203271
EPA 200.7 Rev. 4.4	10/19/2020	10/20/2020 12:25	Elliott D. Healy	10/20/2020 21:54	Betina Topolski	2203278
EPA 200.8 Rev. 5.4	10/19/2020	10/20/2020 12:25	Elliott D. Healy	10/21/2020 15:13	Alexander Thompson	2203278
EPA 300.0 Rev. 2.1	10/19/2020			10/27/2020 19:31	Lipi Saha	2203271
EPA 350.1 Rev. 2.0	10/19/2020			10/24/2020 15:45	Ping Hua	2203272
EPA 351.2 Rev. 2.0	10/19/2020	10/22/2020 13:40	David Boose	10/23/2020 16:08	Elliott Rodriguez	2203272
EPA 353.2 Rev. 2.0	10/19/2020			10/21/2020 10:09	Beverly Y. Sanders	2203272
EPA 365.1 Rev. 2.0	10/19/2020	10/23/2020 15:15	Shengyu Wang	10/27/2020 10:30	Shengyu Wang	2203272
EPA 365.1 Rev. 2.0 dissolved	10/19/2020			10/20/2020 16:10	Samantha Davila	2203273
EPA 8270E	10/19/2020	10/20/2020 13:00	Fe-Val Siddell	10/21/2020 18:37	Vandana T. Nagar	2203279
EPA 8270E dissolved	10/19/2020	10/20/2020 13:00	Fe-Val Siddell	10/21/2020 18:37	Vandana T. Nagar	2203279
EPA 8321B	10/19/2020	10/20/2020 13:30	Hoor Shaik	10/22/2020 03:15	Juyoung Kim	2203277
	10/19/2020	10/22/2020 10:00	Rebecca Ware	10/22/2020 13:49	Rebecca Ware	2203277
	10/19/2020	10/22/2020 10:00	Rebecca Ware	10/23/2020 10:47	Rebecca Ware	2203277
	10/19/2020	10/22/2020 10:00	Rebecca Ware	10/26/2020 12:47	Rebecca Ware	2203277
SM 2120 B-2011	10/19/2020			10/20/2020 16:58	Benjamin T. Nordmann	2203271
SM 2320 B-2011	10/19/2020			10/22/2020 06:29	Samantha Davila	2203271
SM 2340B	10/19/2020			10/20/2020 21:54	Betina Topolski	2203278
SM 2540 C-2011	10/19/2020			10/21/2020 15:19	Yijie Li	2203271
SM 2540 D-2011	10/19/2020			10/21/2020 15:19	Yijie Li	2203271
SM 4500 F-C-2011	10/19/2020			10/22/2020 06:29	Samantha Davila	2203271
SM 5310 B-2011	10/19/2020			10/21/2020 19:08	Lauren Lees	2203272