

Chemical Analysis Report

WAS-SECT-2021-10-18-01

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

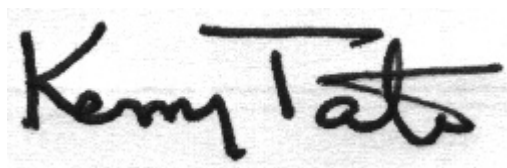
Event Description: **Wakulla BMAP**
Request ID: **RQ-2021-10-18-06**
Customer: **WAS-SECT**
Project ID: **BMAP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 10-NOV-2021 09:50

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: 10/18/2021 12:01

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2284220	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P405261	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P405292	
		Sulfate	9.8		mg SO4/L	P405294	
	SM 2120 B-2011	Color (true)	49	A	PCU	P405263	
	SM 2320 B-2011	Total Alkalinity	130		mg CaCO3/L	P405390	
	SM 2540 C-2011	TDS	180	A	mg/L	P405953	
	SM 2540 D-2011	TSS	2	IA	mg/L	P405875	
2284221	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P405393	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P405587	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P405342	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P405458	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P405331	
2284222	SM 5310 B-2011	Organic Carbon	3.7		mg C/L	P405620	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P405268	
2284225	EPA 8321B	2,4-D	0.0020	U	ug/L	P405338	
		Acesulfame K	0.10	U	ug/L	P405304	
		2,4,5-T	0.0040	U	ug/L	P405338	
		AMPA	0.10	U	ug/L	P405304	
		Acetaminophen	0.0080	U	ug/L	P405338	
		Acetamiprid	0.0020	U	ug/L	P405338	
		Endothall	0.25	U	ug/L	P405304	
		Glufosinate	0.10	U	ug/L	P405304	
		Glyphosate	0.10	U	ug/L	P405304	
		Afidopyropen	0.0020	UJ	ug/L	P405338	LCS
		Bentazon	8.0E-04	U	ug/L	P405338	
		Sucralose	0.073		ug/L	P405304	
		Benzovindiflupyr	0.0020	U	ug/L	P405338	
		Carbamazepine	8.0E-04	U	ug/L	P405338	
		Clothianidin	0.0020	U	ug/L	P405338	
		Dinotefuran	0.0020	U	ug/L	P405338	
		Diuron	0.0020	U	ug/L	P405338	
		Fenuron	0.016	U	ug/L	P405338	
		Fluridone	8.0E-04	U	ug/L	P405338	
		Imazapyr	0.0040	U	ug/L	P405338	
		Hydrocodone	0.0020	U	ug/L	P405338	
		Ibuprofen	0.020	U	ug/L	P405338	
		Imidacloprid	0.0020	U	ug/L	P405338	
		Linuron	0.0040	U	ug/L	P405338	
		Mandestrobin	0.0020	U	ug/L	P405338	
		MCP	0.0040	U	ug/L	P405338	
		Naproxen	0.0080	U	ug/L	P405338	
		Primidone	0.0040	U	ug/L	P405338	
		Pyraclostrobin	0.0020	U	ug/L	P405338	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2284225	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P405338	
		Tolfenpyrad	0.0020	U	ug/L	P405338	
		Triclopyr	0.0040	U	ug/L	P405338	
2284226	EPA 200.7 Rev. 4.4	Calcium	47.0		mg/L	P405355	
		Iron	65	I	ug/L	P405355	
		Magnesium	10.1		mg/L	P405355	
		Potassium	0.57	I	mg/L	P405355	
		Sodium	5.8		mg/L	P405355	
		Strontium	110		ug/L	P405355	
		Tin	3.0	U	ug/L	P405355	
		Titanium	0.95	I	ug/L	P405355	
		Vanadium	2.6	I	ug/L	P405355	
		Zinc	5.0	U	ug/L	P405355	
	EPA 200.8 Rev. 5.4	Aluminum	55		ug/L	P405355	
		Antimony	0.070	I	ug/L	P405355	
		Arsenic	0.60		ug/L	P405355	
		Barium	11.1		ug/L	P405355	
		Beryllium	0.010	U	ug/L	P405355	
		Boron**	16.9		ug/L	P405355	
		Cadmium	0.020	U	ug/L	P405355	
		Chromium	0.75	I	ug/L	P405355	
		Cobalt	0.028	I	ug/L	P405355	
		Copper	0.40	U	ug/L	P405355	
		Lead	0.20	U	ug/L	P405355	
		Manganese	1.86		ug/L	P405355	
		Molybdenum	1.31		ug/L	P405355	
		Nickel	0.50	U	ug/L	P405355	
		Selenium	0.46	I	ug/L	P405355	
		Silver	0.010	U	ug/L	P405355	
		Thallium	0.10	U	ug/L	P405355	
	SM 2340B	Hardness	159		mg/L	P405355	
2284227	EPA 8270E	Acetochlor	0.26	U	ng/L	P405100	
		Alachlor	0.26	U	ng/L	P405100	
		Ametryn	0.63	U	ng/L	P405100	
		Atrazine	0.66	I	ng/L	P405100	
		Atrazine Desethyl	1.6	U	ng/L	P405100	
		Azinphos Methyl	2.1	UJ	ng/L	P405100	LCS, MS, RPD
		Azoxystrobin**	0.53	U	ng/L	P405100	
		Bromacil	0.53	U	ng/L	P405100	
		Butylate	0.42	U	ng/L	P405100	
		Caffeine**	7.9	U	ng/L	P405100	
		Carbophenothion	0.53	U	ng/L	P405100	
		Carfentrazone Ethyl**	0.11	U	ng/L	P405100	
		Chlorpyrifos Ethyl	0.26	U	ng/L	P405100	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2284227	EPA 8270E	Chlorpyrifos Methyl	0.053	U	ng/L	P405100	
		Cyanazine	3.4	U	ng/L	P405100	
		Demeton	1.6	U	ng/L	P405100	
		Diazinon	0.13	U	ng/L	P405100	
		Difenoconazole**	0.63	U	ng/L	P405100	
		Dimethenamid**	0.11	U	ng/L	P405100	
		Disulfoton	0.53	U	ng/L	P405100	
		Dithiopyr**	0.18	U	ng/L	P405100	
		EPTC	1.3	U	ng/L	P405100	
		Ethion	0.16	U	ng/L	P405100	
		Ethoprop	0.11	U	ng/L	P405100	
		Fenamiphos	0.53	U	ng/L	P405100	
		Fenbuconazole**	0.13	U	ng/L	P405100	
		Fipronil	0.26	U	ng/L	P405100	
		Fipronil Desulfinyl**	0.13	U	ng/L	P405100	
		Fipronil Sulfide	0.16	U	ng/L	P405100	
		Fipronil Sulfone	0.16	U	ng/L	P405100	
		Fluazifop-P-butyl**	0.11	U	ng/L	P405100	
		Fludioxonil**	0.13	U	ng/L	P405100	
		Flumioxazin**	1.8	UJ	ng/L	P405100	LCS, MS
		Flutolanil**	0.11	U	ng/L	P405100	
		Fluxapyroxad**	0.11	I	ng/L	P405100	
		Fonofos	0.21	U	ng/L	P405100	
		Hexazinone	0.53	U	ng/L	P405100	
		Imazalil**	0.79	U	ng/L	P405100	
		Iprodione**	0.63	U	ng/L	P405100	MS
		Malathion	0.37	U	ng/L	P405100	
		Metaxyl	0.79	U	ng/L	P405100	
		Metolachlor	0.37	U	ng/L	P405100	
		Metribuzin	3.4	U	ng/L	P405100	
		Mevinphos	1.1	U	ng/L	P405100	
		Molinate	0.32	U	ng/L	P405100	
		Myclobutanil**	0.26	U	ng/L	P405100	
		Naled**	1.6	UJ	ng/L	P405100	LCS
		Norflurazon	0.53	U	ng/L	P405100	
		Oxadiazon	0.32	U	ng/L	P405100	
		Oxyfluorfen**	0.16	U	ng/L	P405100	
		Parathion Ethyl	0.26	U	ng/L	P405100	
		Parathion Methyl	0.58	U	ng/L	P405100	
		Pendimethalin	1.1	U	ng/L	P405100	
		Phorate	0.55	U	ng/L	P405100	
		Prodiamine**	0.18	U	ng/L	P405100	
		Prometon	0.95	U	ng/L	P405100	
		Prometryn	0.21	U	ng/L	P405100	
		Pronamide**	0.16	U	ng/L	P405100	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2284227	EPA 8270E	Propiconazole**	0.53	U	ng/L	P405100	
		Pyriproxyfen**	0.13	UJ	ng/L	P405100	LCS, RPD
		Simazine	9.8		ng/L	P405100	
		Sulfentrazone**	0.53	U	ng/L	P405100	
		Tebuconazole**	0.53	U	ng/L	P405100	
		Terbufos	0.11	U	ng/L	P405100	
		Terbutylazine	0.45	U	ng/L	P405100	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 8321B: MS accuracy for dinotefuran could not be assessed due to high concentration of parameter in the spiked sample. 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.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P405261

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405355

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
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: P405355

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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: P405292

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P405294

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: P405587

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405458

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405331

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405268

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

Reference Method: EPA 8270E
Batch ID: P405100

Component	Result	Code	Units
Acetochlor	0.50	U	ng/L
Acetochlor	0.50	U	ng/L
Alachlor	0.50	U	ng/L
Alachlor	0.50	U	ng/L
Ametryn	1.2	U	ng/L
Ametryn	1.2	U	ng/L
Atrazine	0.50	U	ng/L
Atrazine	0.50	U	ng/L
Atrazine Desethyl	3.0	U	ng/L
Atrazine Desethyl	3.0	U	ng/L
Azinphos Methyl	4.0	U	ng/L
Azinphos Methyl	4.0	U	ng/L
Azoxystrobin	1.0	U	ng/L
Azoxystrobin	1.0	U	ng/L
Bromacil	1.0	U	ng/L
Bromacil	1.0	U	ng/L
Butylate	0.80	U	ng/L
Butylate	0.80	U	ng/L
Caffeine	15	U	ng/L
Caffeine	15	U	ng/L
Carbophenothion	1.0	U	ng/L
Carbophenothion	1.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P405100

Component	Result	Code	Units
Carfentrazone Ethyl	0.20	U	ng/L
Carfentrazone Ethyl	0.20	U	ng/L
Chlorpyrifos Ethyl	0.50	U	ng/L
Chlorpyrifos Ethyl	0.50	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	6.5	U	ng/L
Cyanazine	6.5	U	ng/L
Demeton	3.0	U	ng/L
Demeton	3.0	U	ng/L
Diazinon	0.25	U	ng/L
Diazinon	0.25	U	ng/L
Difenoconazole	1.2	U	ng/L
Difenoconazole	1.2	U	ng/L
Dimethenamid	0.20	U	ng/L
Dimethenamid	0.20	U	ng/L
Disulfoton	1.0	U	ng/L
Disulfoton	1.0	U	ng/L
Dithiopyr	0.35	U	ng/L
Dithiopyr	0.35	U	ng/L
EPTC	2.5	U	ng/L
EPTC	2.5	U	ng/L
Ethion	0.30	U	ng/L
Ethion	0.30	U	ng/L
Ethoprop	0.20	U	ng/L
Ethoprop	0.20	U	ng/L
Fenamiphos	1.0	U	ng/L
Fenamiphos	1.0	U	ng/L
Fenbuconazole	0.25	U	ng/L
Fenbuconazole	0.25	U	ng/L
Fipronil	0.50	U	ng/L
Fipronil	0.50	U	ng/L
Fipronil Desulfinyl	0.25	U	ng/L
Fipronil Desulfinyl	0.25	U	ng/L
Fipronil Sulfide	0.30	U	ng/L
Fipronil Sulfide	0.30	U	ng/L
Fipronil Sulfone	0.30	U	ng/L
Fipronil Sulfone	0.30	U	ng/L
Fluazifop-P-butyl	0.20	U	ng/L
Fluazifop-P-butyl	0.20	U	ng/L
Fludioxonil	0.25	U	ng/L
Fludioxonil	0.25	U	ng/L
Flumioxazin	3.5	U	ng/L
Flumioxazin	3.5	U	ng/L
Flutolanil	0.20	U	ng/L
Flutolanil	0.20	U	ng/L
Fluxapyroxad	0.20	U	ng/L
Fluxapyroxad	0.20	U	ng/L
Fonofos	0.40	U	ng/L
Fonofos	0.40	U	ng/L
Hexazinone	1.0	U	ng/L
Hexazinone	1.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P405100

Component	Result	Code	Units
Imazalil	1.5	U	ng/L
Imazalil	1.5	U	ng/L
Iprodione	1.2	U	ng/L
Iprodione	1.2	U	ng/L
Malathion	0.70	U	ng/L
Malathion	0.70	U	ng/L
Metaxyl	1.5	U	ng/L
Metaxyl	1.5	U	ng/L
Metolachlor	0.70	U	ng/L
Metolachlor	0.70	U	ng/L
Metribuzin	6.5	U	ng/L
Metribuzin	6.5	U	ng/L
Mevinphos	2.1	U	ng/L
Mevinphos	2.1	U	ng/L
Molinate	0.60	U	ng/L
Molinate	0.60	U	ng/L
Myclobutanil	0.50	U	ng/L
Myclobutanil	0.50	U	ng/L
Naled	3.0	U	ng/L
Naled	3.0	U	ng/L
Norflurazon	1.0	U	ng/L
Norflurazon	1.0	U	ng/L
Oxadiazon	0.60	U	ng/L
Oxadiazon	0.60	U	ng/L
Oxyfluorfen	0.30	U	ng/L
Oxyfluorfen	0.30	U	ng/L
Parathion Ethyl	0.50	U	ng/L
Parathion Ethyl	0.50	U	ng/L
Parathion Methyl	1.1	U	ng/L
Parathion Methyl	1.1	U	ng/L
Pendimethalin	2.0	U	ng/L
Pendimethalin	2.0	U	ng/L
Phorate	1.0	U	ng/L
Phorate	1.0	U	ng/L
Prodiamine	0.35	U	ng/L
Prodiamine	0.35	U	ng/L
Prometon	1.8	U	ng/L
Prometon	1.8	U	ng/L
Prometryn	0.40	U	ng/L
Prometryn	0.40	U	ng/L
Pronamide	0.30	U	ng/L
Pronamide	0.30	U	ng/L
Propiconazole	1.0	U	ng/L
Propiconazole	1.0	U	ng/L
Pyriproxyfen	0.25	U	ng/L
Pyriproxyfen	0.25	U	ng/L
Simazine	1.0	U	ng/L
Simazine	1.0	U	ng/L
Sulfentrazone	1.0	U	ng/L
Sulfentrazone	1.0	U	ng/L
Tebuconazole	1.0	U	ng/L
Tebuconazole	1.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P405100

Component	Result	Code	Units
Terbufos	0.20	U	ng/L
Terbufos	0.20	U	ng/L
Terbuthylazine	0.85	U	ng/L
Terbuthylazine	0.85	U	ng/L

Reference Method: EPA 8321B

Batch ID: P405304

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: P405338

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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	0.0040	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: SM 2120 B-2011

Batch ID: P405263

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P405390

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

Reference Method: SM 2540 C-2011
Batch ID: P405953

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P405875

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P405393

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P405620

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: P405355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Iron	108		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	103		P	85 - 115
Sodium	106		P	85 - 115
Strontium	102		P	85 - 115
Tin	102		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.2		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	94.3		P	85 - 115
Barium	101		P	85 - 115
Beryllium	95.5		P	85 - 115
Boron	97.5		P	85 - 115
Cadmium	95.3		P	85 - 115
Chromium	93.1		P	85 - 115
Cobalt	93.4		P	85 - 115
Copper	92.9		P	85 - 115
Lead	97.3		P	85 - 115
Manganese	92.9		P	85 - 115
Molybdenum	95.1		P	85 - 115
Nickel	94.1		P	85 - 115
Selenium	97.3		P	85 - 115
Silver	93.7		P	85 - 115
Thallium	96.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P405292

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P405294

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P405587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P405342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P405458

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: P405331

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P405268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: EPA 8270E
 Batch ID: P405100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	95.4	97.3	P/P	70 - 121
Alachlor	84.5	88.3	P/P	70 - 119
Ametryn	81.8	90.2	P/P	61 - 135
Atrazine	87.7	90.8	P/P	76 - 123
Atrazine Desethyl	51.3	54.4	P/P	35 - 140
Azinphos Methyl	54.0	120	F/P	57 - 163
Azoxystrobin	84.5	84.9	P/P	43 - 231
Bromacil	78.1	80.5	P/P	42 - 123
Butylate	57.7	56.9	P/P	34 - 92.0
Caffeine	94.2	106	P/P	70 - 130
Carbophenothion	91.5	93.4	P/P	61 - 121
Carfentrazone Ethyl	92.5	95.8	P/P	62 - 139
Chlorpyrifos Ethyl	91.2	108	P/P	67 - 121
Chlorpyrifos Methyl	93.2	101	P/P	67 - 120
Cyanazine	115	117	P/P	20 - 226
Demeton	74.9	80.9	P/P	35 - 125
Diazinon	96.5	99.1	P/P	70 - 122
Difenoconazole	69.6	73.1	P/P	56 - 186
Dimethenamid	84.8	87.4	P/P	67 - 119
Disulfoton	85.6	90.6	P/P	47 - 120
Dithiopyr	81.5	85.3	P/P	67 - 118
EPTC	56.3	59.0	P/P	33 - 90.0
Ethion	89.9	97.6	P/P	40 - 133
Ethoprop	86.7	89.8	P/P	61 - 121
Fenamiphos	118	117	P/P	31 - 139
Fenbuconazole	115	104	P/P	66 - 141
Fipronil	92.3	95.9	P/P	62 - 129
Fipronil Desulfinyl	92.1	101	P/P	59 - 126

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P405100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fipronil Sulfide	80.1	91.5	P/P	63 - 117
Fipronil Sulfone	84.8	89.6	P/P	57 - 117
Fluazifop-P-butyl	82.2	86.0	P/P	63 - 124
Fludioxonil	85.9	91.9	P/P	63 - 123
Flumioxazin	291	303	F/F	34 - 245
Flutolanil	74.3	78.5	P/P	56 - 131
Fluxapyroxad	73.4	83.4	P/P	33 - 140
Fonofos	87.4	88.5	P/P	61 - 116
Hexazinone	95.6	99.6	P/P	55 - 138
Imazalil	81.8	106	P/P	33 - 143
Iprodione	96.9	111	P/P	59 - 118
Malathion	126	133	P/P	62 - 138
Metalaxyl	82.8	86.1	P/P	24 - 147
Metolachlor	88.9	93.2	P/P	68 - 118
Metribuzin	89.9	97.0	P/P	20 - 239
Mevinphos	89.3	88.8	P/P	46 - 124
Molinate	68.4	72.0	P/P	46 - 100
Myclobutanil	86.7	90.6	P/P	32 - 149
Naled	31.4	33.9	F/P	32 - 95.0
Norflurazon	79.0	83.1	P/P	57 - 127
Oxadiazon	76.4	79.2	P/P	63 - 118
Oxyfluorfen	71.5	81.8	P/P	69 - 137
Parathion Ethyl	91.1	90.9	P/P	70 - 113
Parathion Methyl	103	108	P/P	71 - 130
Pendimethalin	78.3	71.7	P/P	55 - 118
Phorate	85.2	84.1	P/P	46 - 125
Prodiamine	56.0	61.4	P/P	20 - 141
Prometon	92.2	94.2	P/P	54 - 122
Prometryn	79.8	86.4	P/P	66 - 124
Pronamide	88.0	93.4	P/P	79 - 122
Propiconazole	86.0	89.2	P/P	61 - 126
Pyriproxyfen	32.6	59.9	F/P	52 - 131
Simazine	85.5	86.3	P/P	75 - 128
Sulfentrazone	107	114	P/P	20 - 132
Tebuconazole	91.9	96.5	P/P	20 - 116
Terbufos	103	103	P/P	61 - 117
Terbuthylazine	85.8	89.0	P/P	74 - 116

Reference Method: EPA 8321B

Batch ID: P405304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.9		P	40 - 150
AMPA	97.0		P	40 - 160
Endothall	70.3		P	40 - 150
Glufosinate	109		P	40 - 160
Glyphosate	86.6		P	40 - 160
Sucralose	91.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P405338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	120		P	40 - 150
2,4,5-T	113		P	40 - 150
Acetaminophen	124		P	30 - 150
Acetamiprid	79.2		P	40 - 150
Afidopyropen	19.5		F	40 - 150
Bentazon	87.9		P	30 - 150
Benzovindiflupyr	87.7		P	40 - 150
Carbamazepine	93.8		P	40 - 150
Clothianidin	72.2		P	40 - 150
Dinotefuran	81.6		P	40 - 150
Diuron	80.5		P	40 - 150
Fenuron	90.6		P	40 - 150
Fluridone	88.8		P	40 - 150
Hydrocodone	83.6		P	40 - 150
Ibuprofen	84.9		P	40 - 150
Imazapyr	96.3		P	40 - 150
Imidacloprid	92.1		P	40 - 150
Linuron	79.9		P	40 - 150
Mandestrobin	86.8		P	40 - 150
MCPP	121		P	40 - 150
Naproxen	72.1		P	40 - 150
Primidone	84.8		P	40 - 150
Pyraclostrobin	82.9		P	40 - 150
Thiamethoxam	88.5		P	40 - 150
Tolfenpyrad	46.3		P	30 - 150
Triclopyr	102		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P405263

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

Reference Method: SM 2320 B-2011

Batch ID: P405390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P405393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P405620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283902	Calcium	109	107	P/P	80 - 120
2283902	Iron	109	106	P/P	80 - 120
2283902	Magnesium	112	108	P/P	80 - 120
2283902	Potassium	111	109	P/P	80 - 120
2283902	Sodium	105	103	P/P	80 - 120
2283902	Strontium	103	101	P/P	80 - 120
2283902	Tin	104	103	P/P	80 - 120
2283902	Titanium	105	104	P/P	80 - 120
2283902	Vanadium	104	103	P/P	80 - 120
2283902	Zinc	104	103	P/P	80 - 120
2283931	Calcium	97.6		P	80 - 120
2283931	Iron	105		P	80 - 120
2283931	Magnesium	104		P	80 - 120
2283931	Potassium	102		P	80 - 120
2283931	Sodium	106		P	80 - 120
2283931	Strontium	100		P	80 - 120
2283931	Tin	104		P	80 - 120
2283931	Titanium	107		P	80 - 120
2283931	Vanadium	109		P	80 - 120
2283931	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283902	Aluminum	100	101	P/P	80 - 120
2283902	Antimony	104	105	P/P	80 - 120
2283902	Arsenic	96.7	97.4	P/P	80 - 120
2283902	Barium	104	105	P/P	80 - 120
2283902	Beryllium	98.8	95.1	P/P	80 - 120
2283902	Boron	101	102	P/P	80 - 120
2283902	Cadmium	100	101	P/P	80 - 120
2283902	Chromium	96.9	97.1	P/P	80 - 120
2283902	Cobalt	96.3	96.4	P/P	80 - 120
2283902	Copper	98.2	98.5	P/P	80 - 120
2283902	Lead	101	102	P/P	80 - 120
2283902	Manganese	96.4	96.6	P/P	80 - 120
2283902	Molybdenum	99.4	100	P/P	80 - 120
2283902	Nickel	96.7	96.3	P/P	80 - 120
2283902	Selenium	101	98.1	P/P	80 - 120
2283902	Silver	96.5	96.5	P/P	80 - 120
2283902	Thallium	101	102	P/P	80 - 120
2283931	Aluminum	98.9		P	80 - 120
2283931	Antimony	107		P	80 - 120
2283931	Arsenic	98.4		P	80 - 120
2283931	Barium	107		P	80 - 120
2283931	Beryllium	97.1		P	80 - 120
2283931	Boron	102		P	80 - 120
2283931	Cadmium	103		P	80 - 120
2283931	Chromium	101		P	80 - 120
2283931	Cobalt	97.4		P	80 - 120
2283931	Copper	94.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283931	Lead	101		P	80 - 120
2283931	Manganese	99.6		P	80 - 120
2283931	Molybdenum	104		P	80 - 120
2283931	Nickel	96.4		P	80 - 120
2283931	Selenium	98.0		P	80 - 120
2283931	Silver	97.4		P	80 - 120
2283931	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P405292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283923	Chloride	98.7		P	90 - 110
2284004	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P405294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283923	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P405587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284241	Ammonia-N	97.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P405342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282772	Kjeldahl Nitrogen	95.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284241	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284065	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284222	O-Phosphate-P	98.1	98.7	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P405100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283948	Acetochlor	99.1	96.5	P/P	66 - 122
2283948	Alachlor	90.6	91.2	P/P	65 - 122
2283948	Ametryn	93.5	89.7	P/P	45 - 173
2283948	Atrazine	94.8	94.0	P/P	70 - 134
2283948	Atrazine Desethyl	49.8	47.4	P/P	25 - 150
2283948	Azinphos Methyl	37.2	44.0	F/P	44 - 174
2283948	Azoxystrobin	109	108	P/P	10 - 268
2283948	Bromacil	80.9	83.9	P/P	31 - 145
2283948	Butylate	50.2	54.3	P/P	15 - 97.0
2283948	Caffeine	117	121	P/P	70 - 130
2283948	Carbophenothion	94.2	86.7	P/P	42 - 129
2283948	Carfentrazone Ethyl	94.7	95.2	P/P	62 - 145
2283948	Chlorpyrifos Ethyl	98.8	94.6	P/P	60 - 124
2283948	Chlorpyrifos Methyl	97.2	91.3	P/P	66 - 119
2283948	Cyanazine	115	116	P/P	17 - 225
2283948	Demeton	85.4	83.6	P/P	36 - 142
2283948	Diazinon	106	107	P/P	70 - 128
2283948	Difenoconazole	68.6	76.4	P/P	33 - 222
2283948	Dimethenamid	86.1	82.1	P/P	54 - 125
2283948	Disulfoton	93.0	82.9	P/P	49 - 133
2283948	Dithiopyr	87.9	93.0	P/P	55 - 123
2283948	EPTC	45.8	52.8	P/P	19 - 91.0
2283948	Ethion	93.1	84.4	P/P	13 - 143
2283948	Ethoprop	86.8	86.3	P/P	49 - 144
2283948	Fenamiphos	108	97.9	P/P	32 - 136
2283948	Fenbuconazole	120	123	P/P	73 - 148
2283948	Fipronil	101	101	P/P	57 - 129
2283948	Fipronil Desulfinyl	105	104	P/P	49 - 127
2283948	Fipronil Sulfide	90.0	83.6	P/P	44 - 127
2283948	Fipronil Sulfone	92.5	82.1	P/P	35 - 126
2283948	Fluazifop-P-butyl	85.2	84.8	P/P	67 - 129
2283948	Fludioxonil	88.6	87.2	P/P	61 - 126
2283948	Flumioxazin	336	323	F/F	38 - 279
2283948	Flutolanil	120	108	P/P	55 - 136
2283948	Fluxapyroxad	93.7	87.1	P/P	57 - 117
2283948	Fonofos	92.0	85.8	P/P	58 - 125
2283948	Hexazinone	112	109	P/P	57 - 148
2283948	Imazalil	85.0	91.6	P/P	10 - 221
2283948	Iprodione	153	129	F/P	32 - 140
2283948	Malathion	133	130	P/P	52 - 138
2283948	Metalaxyl	84.9	84.6	P/P	46 - 134
2283948	Metolachlor	102	98.0	P/P	58 - 122
2283948	Metribuzin	86.7	104	P/P	16 - 272
2283948	Mevinphos	94.4	96.5	P/P	45 - 140
2283948	Molinate	67.2	71.7	P/P	41 - 103
2283948	Myclobutanil	91.2	91.6	P/P	60 - 134
2283948	Naled	26.1	26.8	P/P	20 - 113
2283948	Norflurazon	78.6	79.9	P/P	51 - 123
2283948	Oxadiazon	76.4	75.2	P/P	44 - 125
2283948	Oxyfluorfen	92.2	94.7	P/P	66 - 176
2283948	Parathion Ethyl	91.7	91.9	P/P	57 - 132
2283948	Parathion Methyl	116	109	P/P	59 - 156

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P405100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283948	Pendimethalin	79.6	75.5	P/P	59 - 129
2283948	Phorate	83.6	81.9	P/P	47 - 136
2283948	Prodiamine	101	93.1	P/P	10 - 159
2283948	Prometon	92.2	91.3	P/P	59 - 127
2283948	Prometryn	84.4	86.3	P/P	59 - 129
2283948	Pronamide	103	110	P/P	65 - 145
2283948	Propiconazole	90.9	90.5	P/P	28 - 165
2283948	Pyriproxyfen	42.7	40.1	P/P	21 - 180
2283948	Simazine	84.3	78.7	P/P	63 - 147
2283948	Sulfentrazone	130	116	P/P	32 - 136
2283948	Tebuconazole	96.2	96.9	P/P	10 - 117
2283948	Terbufos	112	113	P/P	61 - 131
2283948	Terbutylazine	87.0	84.7	P/P	62 - 126

Reference Method: EPA 8321B

Batch ID: P405304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284225	Acesulfame K	92.0	87.2	P/P	40 - 150
2284225	AMPA	83.8	82.9	P/P	40 - 160
2284225	Endothall	74.4	78.0	P/P	40 - 150
2284225	Glufosinate	91.9	96.6	P/P	40 - 160
2284225	Glyphosate	66.5	70.7	P/P	40 - 160
2284225	Sucralose	88.1	101	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P405338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284310	2,4-D	129	127	P/P	40 - 150
2284310	2,4,5-T	127	116	P/P	40 - 150
2284310	Acetaminophen	109	97.8	P/P	30 - 150
2284310	Acetamiprid	89.5	79.4	P/P	40 - 150
2284310	Afidopyropen	82.4	78.4	P/P	40 - 150
2284310	Bentazon	50.6	60.9	P/P	30 - 150
2284310	Benzovindiflupyr	89.8	88.8	P/P	40 - 150
2284310	Carbamazepine	106	99.3	P/P	40 - 150
2284310	Clothianidin	91.9	90.8	P/P	40 - 150
2284310	Diuron	83.7	64.4	P/P	40 - 150
2284310	Fenuron	89.4	86.5	P/P	40 - 150
2284310	Fluridone	84.1	87.3	P/P	40 - 150
2284310	Hydrocodone	92.2	87.8	P/P	40 - 150
2284310	Ibuprofen	86.2	72.8	P/P	40 - 150
2284310	Imazapyr	91.6	96.4	P/P	40 - 150
2284310	Imidacloprid	123	122	P/P	40 - 150
2284310	Linuron	91.8	85.8	P/P	40 - 150
2284310	Mandestrobin	81.9	86.8	P/P	40 - 150
2284310	MCCP	126	129	P/P	40 - 150
2284310	Naproxen	89.1	67.6	P/P	40 - 150
2284310	Primidone	86.5	99.7	P/P	40 - 150
2284310	Pyraclostrobin	83.0	81.6	P/P	40 - 150
2284310	Thiamethoxam	119	122	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P405338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284310	Tolfenpyrad	48.3	56.3	P/P	30 - 150
2284310	Triclopyr	110	121	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P405393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284238	Fluoride	101	102	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P405620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284221	Organic Carbon	98.9	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284589	Turbidity	4.40	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283902	Calcium	1.24	Spike	P	0 - 20
2283902	Iron	2.83	Spike	P	0 - 20
2283902	Magnesium	3.10	Spike	P	0 - 20
2283902	Potassium	1.76	Spike	P	0 - 20
2283902	Sodium	1.34	Spike	P	0 - 20
2283902	Strontium	1.81	Spike	P	0 - 20
2283902	Tin	1.10	Spike	P	0 - 20
2283902	Titanium	1.15	Spike	P	0 - 20
2283902	Vanadium	1.40	Spike	P	0 - 20
2283902	Zinc	1.19	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283902	Aluminum	1.17	Spike	P	0 - 20
2283902	Antimony	0.462	Spike	P	0 - 20
2283902	Arsenic	0.772	Spike	P	0 - 20
2283902	Barium	0.827	Spike	P	0 - 20
2283902	Beryllium	3.78	Spike	P	0 - 20
2283902	Boron	1.40	Spike	P	0 - 20
2283902	Cadmium	1.06	Spike	P	0 - 20
2283902	Chromium	0.261	Spike	P	0 - 20
2283902	Cobalt	0.131	Spike	P	0 - 20
2283902	Copper	0.332	Spike	P	0 - 20
2283902	Lead	0.384	Spike	P	0 - 20
2283902	Manganese	0.166	Spike	P	0 - 20
2283902	Molybdenum	0.563	Spike	P	0 - 20
2283902	Nickel	0.389	Spike	P	0 - 20
2283902	Selenium	3.11	Spike	P	0 - 20
2283902	Silver	0.0328	Spike	P	0 - 20
2283902	Thallium	1.19	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283923	Chloride	0.897	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283923	Sulfate	2.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284241	Ammonia-N	1.07	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282772	Kjeldahl Nitrogen	3.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284241	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284065	Total-P	2.20	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284222	O-Phosphate-P	0.471	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P405100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283948	Acetochlor	2.57	Spike	P	0 - 30
2283948	Alachlor	0.723	Spike	P	0 - 30
2283948	Ametryn	4.08	Spike	P	0 - 30
2283948	Atrazine	0.684	Spike	P	0 - 30
2283948	Atrazine Desethyl	4.90	Spike	P	0 - 30
2283948	Azinphos Methyl	16.8	Spike	P	0 - 30
2283948	Azoxystrobin	1.04	Spike	P	0 - 30
2283948	Bromacil	3.57	Spike	P	0 - 30
2283948	Butylate	7.86	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P405100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283948	Caffeine	3.23	Spike	P	0 - 30
2283948	Carbophenothion	8.28	Spike	P	0 - 30
2283948	Carfentrazone Ethyl	0.531	Spike	P	0 - 30
2283948	Chlorpyrifos Ethyl	4.33	Spike	P	0 - 30
2283948	Chlorpyrifos Methyl	6.25	Spike	P	0 - 30
2283948	Cyanazine	1.15	Spike	P	0 - 30
2283948	Demeton	2.12	Spike	P	0 - 30
2283948	Diazinon	1.43	Spike	P	0 - 30
2283948	Difenoconazole	10.8	Spike	P	0 - 30
2283948	Dimethenamid	4.69	Spike	P	0 - 30
2283948	Disulfoton	11.4	Spike	P	0 - 30
2283948	Dithiopyr	5.61	Spike	P	0 - 30
2283948	EPTC	14.1	Spike	P	0 - 30
2283948	Ethion	9.79	Spike	P	0 - 30
2283948	Ethoprop	0.609	Spike	P	0 - 30
2283948	Fenamiphos	9.58	Spike	P	0 - 30
2283948	Fenbuconazole	2.79	Spike	P	0 - 30
2283948	Fipronil	0.0747	Spike	P	0 - 30
2283948	Fipronil Desulfanyl	1.46	Spike	P	0 - 30
2283948	Fipronil Sulfide	7.36	Spike	P	0 - 30
2283948	Fipronil Sulfone	11.9	Spike	P	0 - 30
2283948	Fluazifop-P-butyl	0.488	Spike	P	0 - 30
2283948	Fludioxonil	1.55	Spike	P	0 - 30
2283948	Flumioxazin	3.94	Spike	P	0 - 30
2283948	Flutolanil	8.87	Spike	P	0 - 30
2283948	Fluxapyroxad	5.68	Spike	P	0 - 30
2283948	Fonofos	7.01	Spike	P	0 - 30
2283948	Hexazinone	2.93	Spike	P	0 - 30
2283948	Imazalil	7.46	Spike	P	0 - 30
2283948	Iprodione	16.4	Spike	P	0 - 30
2283948	Malathion	2.05	Spike	P	0 - 30
2283948	Metalaxyl	0.453	Spike	P	0 - 30
2283948	Metolachlor	3.24	Spike	P	0 - 30
2283948	Metribuzin	18.1	Spike	P	0 - 30
2283948	Mevinphos	2.23	Spike	P	0 - 30
2283948	Molinate	6.56	Spike	P	0 - 30
2283948	Myclobutanil	0.495	Spike	P	0 - 30
2283948	Naled	2.62	Spike	P	0 - 30
2283948	Norflurazon	1.64	Spike	P	0 - 30
2283948	Oxadiazon	1.55	Spike	P	0 - 30
2283948	Oxyfluorfen	2.74	Spike	P	0 - 30
2283948	Parathion Ethyl	0.244	Spike	P	0 - 30
2283948	Parathion Methyl	6.15	Spike	P	0 - 30
2283948	Pendimethalin	5.24	Spike	P	0 - 30
2283948	Phorate	1.98	Spike	P	0 - 30
2283948	Prodiamine	7.92	Spike	P	0 - 30
2283948	Prometon	0.932	Spike	P	0 - 30
2283948	Prometryn	2.14	Spike	P	0 - 30
2283948	Pronamide	6.28	Spike	P	0 - 30
2283948	Propiconazole	0.423	Spike	P	0 - 30
2283948	Pyriproxyfen	6.33	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P405100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283948	Simazine	3.91	Spike	P	0 - 30
2283948	Sulfentrazone	10.8	Spike	P	0 - 30
2283948	Tebuconazole	0.563	Spike	P	0 - 30
2283948	Terbufos	1.05	Spike	P	0 - 30
2283948	Terbutylazine	2.70	Spike	P	0 - 30
LFB	Acetochlor	1.90	LCS	P	0 - 30
LFB	Alachlor	4.44	LCS	P	0 - 30
LFB	Ametryn	9.83	LCS	P	0 - 30
LFB	Atrazine	3.48	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.91	LCS	P	0 - 30
LFB	Azinphos Methyl	75.8	LCS	F	0 - 30
LFB	Azoxystrobin	0.473	LCS	P	0 - 30
LFB	Bromacil	2.94	LCS	P	0 - 30
LFB	Butylate	1.35	LCS	P	0 - 30
LFB	Caffeine	11.4	LCS	P	0 - 30
LFB	Carbophenothion	2.08	LCS	P	0 - 30
LFB	Carfentrazone Ethyl	3.51	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	16.4	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	7.72	LCS	P	0 - 30
LFB	Cyanazine	1.84	LCS	P	0 - 30
LFB	Demeton	7.74	LCS	P	0 - 30
LFB	Diazinon	2.67	LCS	P	0 - 30
LFB	Difenoconazole	4.89	LCS	P	0 - 30
LFB	Dimethenamid	3.01	LCS	P	0 - 30
LFB	Disulfoton	5.68	LCS	P	0 - 30
LFB	Dithiopyr	4.60	LCS	P	0 - 30
LFB	EPTC	4.67	LCS	P	0 - 30
LFB	Ethion	8.17	LCS	P	0 - 30
LFB	Ethoprop	3.44	LCS	P	0 - 30
LFB	Fenamiphos	1.10	LCS	P	0 - 30
LFB	Fenbuconazole	10.6	LCS	P	0 - 30
LFB	Fipronil	3.85	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	8.92	LCS	P	0 - 30
LFB	Fipronil Sulfide	13.3	LCS	P	0 - 30
LFB	Fipronil Sulfone	5.47	LCS	P	0 - 30
LFB	Fluazifop-P-butyl	4.55	LCS	P	0 - 30
LFB	Fludioxonil	6.77	LCS	P	0 - 30
LFB	Flumioxazin	4.11	LCS	P	0 - 30
LFB	Flutolanil	5.49	LCS	P	0 - 30
LFB	Fluxapyroxad	12.8	LCS	P	0 - 30
LFB	Fonofos	1.22	LCS	P	0 - 30
LFB	Hexazinone	4.08	LCS	P	0 - 30
LFB	Imazalil	25.6	LCS	P	0 - 30
LFB	Iprodione	13.3	LCS	P	0 - 30
LFB	Malathion	5.06	LCS	P	0 - 30
LFB	Metalaxyl	4.01	LCS	P	0 - 30
LFB	Metolachlor	4.73	LCS	P	0 - 30
LFB	Metribuzin	7.57	LCS	P	0 - 30
LFB	Mevinphos	0.601	LCS	P	0 - 30
LFB	Molinate	5.09	LCS	P	0 - 30
LFB	Myclobutanil	4.39	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P405100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Naled	7.65	LCS	P	0 - 30
LFB	Norflurazon	5.05	LCS	P	0 - 30
LFB	Oxadiazon	3.61	LCS	P	0 - 30
LFB	Oxyfluorfen	13.4	LCS	P	0 - 30
LFB	Parathion Ethyl	0.198	LCS	P	0 - 30
LFB	Parathion Methyl	5.48	LCS	P	0 - 30
LFB	Pendimethalin	8.77	LCS	P	0 - 30
LFB	Phorate	1.32	LCS	P	0 - 30
LFB	Prodiamine	9.18	LCS	P	0 - 30
LFB	Prometon	2.20	LCS	P	0 - 30
LFB	Prometryn	7.86	LCS	P	0 - 30
LFB	Pronamide	5.92	LCS	P	0 - 30
LFB	Propiconazole	3.64	LCS	P	0 - 30
LFB	Pyriproxyfen	59.1	LCS	F	0 - 30
LFB	Simazine	0.862	LCS	P	0 - 30
LFB	Sulfentrazone	6.70	LCS	P	0 - 30
LFB	Tebuconazole	4.82	LCS	P	0 - 30
LFB	Terbufos	0.688	LCS	P	0 - 30
LFB	Terbutylazine	3.64	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P405304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284225	Acesulfame K	5.41	Spike	P	0 - 30
2284225	AMPA	1.08	Spike	P	0 - 30
2284225	Endothall	4.79	Spike	P	0 - 30
2284225	Glufosinate	4.96	Spike	P	0 - 30
2284225	Glyphosate	6.10	Spike	P	0 - 30
2284225	Sucralose	13.5	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P405338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284310	2,4-D	2.03	Spike	P	0 - 30
2284310	2,4,5-T	8.95	Spike	P	0 - 30
2284310	Acetaminophen	11.1	Spike	P	0 - 30
2284310	Acetamiprid	11.9	Spike	P	0 - 30
2284310	Afidopyropen	5.02	Spike	P	0 - 30
2284310	Bentazon	4.64	Spike	P	0 - 30
2284310	Benzovindiflupyr	0.927	Spike	P	0 - 30
2284310	Carbamazepine	5.69	Spike	P	0 - 30
2284310	Clothianidin	1.11	Spike	P	0 - 30
2284310	Dinotefuran	2.15	Spike	P	0 - 30
2284310	Diuron	26.1	Spike	P	0 - 30
2284310	Fenuron	3.28	Spike	P	0 - 30
2284310	Fluridone	3.67	Spike	P	0 - 30
2284310	Hydrocodone	4.89	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P405338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284310	Ibuprofen	16.9	Spike	P	0 - 30
2284310	Imazapyr	4.26	Spike	P	0 - 30
2284310	Imidacloprid	0.195	Spike	P	0 - 30
2284310	Linuron	6.78	Spike	P	0 - 30
2284310	Mandestrobin	5.86	Spike	P	0 - 30
2284310	MCPP	1.81	Spike	P	0 - 30
2284310	Naproxen	27.5	Spike	P	0 - 30
2284310	Primidone	14.1	Spike	P	0 - 30
2284310	Pyraclostrobin	1.70	Spike	P	0 - 30
2284310	Thiamethoxam	1.78	Spike	P	0 - 30
2284310	Tolfenpyrad	15.3	Spike	P	0 - 30
2284310	Triclopyr	9.68	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P405263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284220	Color (true)	2.19	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P405390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284238	Total Alkalinity	0.532	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P405953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284220	TDS	8.89	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P405393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284238	Fluoride	0.473	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P405620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284221	Organic Carbon	0.212	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2284225

Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.7	P	30 - 160
EPA 8321B	Diuron-d6	70.3	P	30 - 160
EPA 8321B	Endothall-d6	80.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	92.2	P	30 - 160
EPA 8321B	Sucralose-d6	86.8	P	30 - 160

Lab Sample ID: 2284227

Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Caffeine-d9	60.4	P	20 - 200
EPA 8270E	Simazine-d10	96.4	P	73 - 135
EPA 8270E	Terbufos-d10	104	P	58 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108414

Included Lab Sample IDs: 2284220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A108415

Included Lab Sample IDs: 2284220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108416

Included Lab Sample IDs: 2284222

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108426

Included Lab Sample IDs: 2284220

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: SM 2320 B-2011

Run ID: A108464

Included Lab Sample IDs: 2284220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108464

Included Lab Sample IDs: 2284220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A108478

Included Lab Sample IDs: 2284225

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	97.6	P/P	60 - 160
Glufosinate	110	108	P/P	60 - 160
Glyphosate	90.2	88.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108480

Included Lab Sample IDs: 2284221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108484

Included Lab Sample IDs: 2284221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108494

Included Lab Sample IDs: 2284221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	97.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A108503

Included Lab Sample IDs: 2284225

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.9	85.3	P/P	60 - 160
Endothall	77.8	69.6	P/P	60 - 160
Sucralose	93.8	93.9	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108504

Included Lab Sample IDs: 2284226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.9	99.8	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	96.6	95.1	P/P	90 - 110
Barium	101	98.9	P/P	90 - 110
Beryllium	95.1	93.0	P/P	90 - 110
Boron	98.6	103	P/P	90 - 110
Cadmium	98.6	99.5	P/P	90 - 110
Chromium	95.1	95.3	P/P	90 - 110
Cobalt	93.9	92.3	P/P	90 - 110
Copper	94.6	92.4	P/P	90 - 110
Molybdenum	96.9	97.0	P/P	90 - 110
Nickel	95.5	92.6	P/P	90 - 110
Selenium	101	98.5	P/P	90 - 110
Silver	95.4	95.4	P/P	90 - 110
Thallium	97.5	96.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108517

Included Lab Sample IDs: 2284226

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108517

Included Lab Sample IDs: 2284226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	95.2	94.1	P/P	90 - 110
Manganese	99.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108537

Included Lab Sample IDs: 2284221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	97.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A108545

Included Lab Sample IDs: 2284221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	96.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108571

Included Lab Sample IDs: 2284226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	107	106	P/P	90 - 110
Potassium	97.4	98.0	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Strontium	101	102	P/P	90 - 110
Tin	100	101	P/P	90 - 110
Titanium	99.3	101	P/P	90 - 110
Vanadium	101	102	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A108575

Included Lab Sample IDs: 2284227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	106		P	80 - 120
Alachlor	104		P	80 - 120
Ametryn	110		P	80 - 120
Atrazine	103		P	80 - 120
Atrazine Desethyl	102		P	80 - 120
Azinphos Methyl	108		P	80 - 120
Azoxystrobin	96.8		P	80 - 120
Bromacil	107		P	80 - 120
Butylate	96.4		P	80 - 120
Caffeine	105		P	80 - 120
Carbophenothion	104		P	80 - 120
Carfentrazone Ethyl	110		P	80 - 120
Chlorpyrifos Ethyl	103		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270E

Run ID: A108575

Included Lab Sample IDs: 2284227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorpyrifos Methyl	100		P	80 - 120
Cyanazine	107		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	104		P	80 - 120
Difenoconazole	103		P	80 - 120
Dimethenamid	104		P	80 - 120
Disulfoton	99.0		P	80 - 120
Dithiopyr	105		P	80 - 120
EPTC	101		P	80 - 120
Ethion	104		P	80 - 120
Ethoprop	103		P	80 - 120
Fenamiphos	105		P	80 - 120
Fenbuconazole	108		P	80 - 120
Fipronil	108		P	80 - 120
Fipronil Desulfinyl	105		P	80 - 120
Fipronil Sulfide	103		P	80 - 120
Fipronil Sulfone	104		P	80 - 120
Fluazifop-P-butyl	110		P	80 - 120
Fludioxonil	115		P	80 - 120
Flumioxazin	106		P	80 - 120
Flutolanil	114		P	80 - 120
Fluxapyroxad	106		P	80 - 120
Fonofos	98.1		P	80 - 120
Hexazinone	101		P	80 - 120
Imazalil	104		P	80 - 120
Iprodione	107		P	80 - 120
Malathion	105		P	80 - 120
Metaxyl	107		P	80 - 120
Metolachlor	109		P	80 - 120
Metribuzin	105		P	80 - 120
Mevinphos	96.6		P	80 - 120
Molinate	100		P	80 - 120
Myclobutanil	108		P	80 - 120
Naled	107		P	80 - 120
Norflurazon	104		P	80 - 120
Oxadiazon	112		P	80 - 120
Oxyfluorfen	103		P	80 - 120
Parathion Ethyl	98.5		P	80 - 120
Parathion Methyl	102		P	80 - 120
Pendimethalin	101		P	80 - 120
Phorate	105		P	80 - 120
Prodiamine	111		P	80 - 120
Prometon	109		P	80 - 120
Prometryn	111		P	80 - 120
Pronamide	99.1		P	80 - 120
Propiconazole	111		P	80 - 120
Pyriproxyfen	102		P	80 - 120
Simazine	107		P	80 - 120
Sulfentrazone	101		P	80 - 120
Tebuconazole	104		P	80 - 120
Terbufos	95.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A108575
 Included Lab Sample IDs: 2284227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Terbutylazine	102		P	80 - 120

Reference Method: EPA 8321B
 Run ID: A108578
 Included Lab Sample IDs: 2284225

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.8	101	P/P	50 - 150
2,4,5-T	117	90.7	P/P	50 - 150
Acetaminophen	105	103	P/P	60 - 160
Acetamiprid	101	99.6	P/P	50 - 150
Afidopyropen	111	105	P/P	50 - 150
Bentazon	115	103	P/P	50 - 160
Benzovindiflupyr	101	114	P/P	50 - 150
Carbamazepine	101	109	P/P	60 - 150
Clothianidin	107	102	P/P	60 - 150
Dinotefuran	103	101	P/P	50 - 150
Diuron	103	95.3	P/P	60 - 160
Fenuron	104	98.8	P/P	60 - 150
Fluridone	110	105	P/P	60 - 160
Hydrocodone	102	101	P/P	60 - 150
Ibuprofen	88.8	98.2	P/P	50 - 160
Imazapyr	84.2	91.5	P/P	50 - 150
Imidacloprid	95.9	90.4	P/P	60 - 150
Linuron	105	102	P/P	60 - 150
Mandestrobin	110	104	P/P	50 - 150
MCPP	95.4	95.9	P/P	50 - 150
Naproxen	105	88.9	P/P	50 - 160
Primidone	112	115	P/P	60 - 150
Pyraclostrobin	109	104	P/P	60 - 150
Thiamethoxam	95.9	109	P/P	50 - 150
Tolfenpyrad	111	113	P/P	60 - 150
Triclopyr	89.6	94.6	P/P	50 - 150

* 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	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						4.40	
EPA 200.7 Rev. 4.4	Calcium	108		109	107	97.6		1.24
	Iron	108		109	106	105		2.83
	Magnesium	110		112	108	104		3.10
	Potassium	103		111	109	102		1.76
	Sodium	106		105	103	106		1.34
	Strontium	102		103	101	100		1.81
	Tin	102		104	103	104		1.10
	Titanium	103		105	104	107		1.15
	Vanadium	102		104	103	109		1.40
	Zinc	102		104	103	106		1.19
EPA 200.8 Rev. 5.4	Aluminum	97.2		100	101	98.9		1.17
	Antimony	100		104	105	107		0.462
	Arsenic	94.3		96.7	97.4	98.4		0.772
	Barium	101		104	105	107		0.827
	Beryllium	95.5		98.8	95.1	97.1		3.78
	Boron	97.5		101	102	102		1.40
	Cadmium	95.3		100	101	103		1.06
	Chromium	93.1		96.9	97.1	101		0.261
	Cobalt	93.4		96.3	96.4	97.4		0.131
	Copper	92.9		98.2	98.5	94.0		0.332
	Lead	97.3		101	102	101		0.384
	Manganese	92.9		96.4	96.6	99.6		0.166
	Molybdenum	95.1		99.4	100	104		0.563
	Nickel	94.1		96.7	96.3	96.4		0.389
	Selenium	97.3		101	98.1	98.0		3.11
	Silver	93.7		96.5	96.5	97.4		0.0328
	Thallium	96.6		101	102	103		1.19
EPA 300.0 Rev. 2.1	Chloride	99.6		98.7	104		0.897	
	Sulfate	100		99.5			2.09	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2		97.0	98.2			1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0		95.8	100			3.47
EPA 353.2 Rev. 2.0	NO2NO3-N	100		99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	99.6		103	101			2.20
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6		98.1	98.7			0.471
EPA 8270E	Acetochlor	95.4	97.3	99.1	96.5	1.90		2.57
	Alachlor	84.5	88.3	90.6	91.2	4.44		0.723
	Ametryn	81.8	90.2	93.5	89.7	9.83		4.08
	Atrazine	87.7	90.8	94.8	94.0	3.48		0.684
	Atrazine Desethyl	51.3	54.4	49.8	47.4	5.91		4.90
	Azinphos Methyl	54.0	120	37.2	44.0	75.8		16.8
	Azoxystrobin	84.5	84.9	109	108	0.473		1.04
	Bromacil	78.1	80.5	80.9	83.9	2.94		3.57
	Butylate	57.7	56.9	50.2	54.3	1.35		7.86
	Caffeine	94.2	106	117	121	11.4		3.23
	Carbophenothion	91.5	93.4	94.2	86.7	2.08		8.28
	Carfentrazone Ethyl	92.5	95.8	94.7	95.2	3.51		0.531
	Chlorpyrifos Ethyl	91.2	108	98.8	94.6	16.4		4.33
	Chlorpyrifos Methyl	93.2	101	97.2	91.3	7.72		6.25
	Cyanazine	115	117	115	116	1.84		1.15
	Demeton	74.9	80.9	85.4	83.6	7.74		2.12
	Diazinon	96.5	99.1	106	107	2.67		1.43
	Difenoconazole	69.6	73.1	68.6	76.4	4.89		10.8
	Dimethenamid	84.8	87.4	86.1	82.1	3.01		4.69

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Disulfoton	85.6	90.6	93.0	82.9	5.68	11.4
	Dithiopyr	81.5	85.3	87.9	93.0	4.60	5.61
	EPTC	56.3	59.0	45.8	52.8	4.67	14.1
	Ethion	89.9	97.6	93.1	84.4	8.17	9.79
	Ethoprop	86.7	89.8	86.8	86.3	3.44	0.609
	Fenamiphos	118	117	108	97.9	1.10	9.58
	Fenbuconazole	115	104	120	123	10.6	2.79
	Fipronil	92.3	95.9	101	101	3.85	0.0747
	Fipronil Desulfinyl	92.1	101	105	104	8.92	1.46
	Fipronil Sulfide	80.1	91.5	90.0	83.6	13.3	7.36
	Fipronil Sulfone	84.8	89.6	92.5	82.1	5.47	11.9
	Fluazifop-P-butyl	82.2	86.0	85.2	84.8	4.55	0.488
	Fludioxonil	85.9	91.9	88.6	87.2	6.77	1.55
	Flumioxazin	291	303	336	323	4.11	3.94
	Flutolanil	74.3	78.5	120	108	5.49	8.87
	Fluxapyroxad	73.4	83.4	93.7	87.1	12.8	5.68
	Fonofos	87.4	88.5	92.0	85.8	1.22	7.01
	Hexazinone	95.6	99.6	112	109	4.08	2.93
	Imazalil	81.8	106	85.0	91.6	25.6	7.46
	Iprodione	96.9	111	153	129	13.3	16.4
	Malathion	126	133	133	130	5.06	2.05
	Metalaxyl	82.8	86.1	84.9	84.6	4.01	0.453
	Metolachlor	88.9	93.2	102	98.0	4.73	3.24
	Metribuzin	89.9	97.0	86.7	104	7.57	18.1
	Mevinphos	89.3	88.8	94.4	96.5	0.601	2.23
	Molinate	68.4	72.0	67.2	71.7	5.09	6.56
	Myclobutanil	86.7	90.6	91.2	91.6	4.39	0.495
	Naled	31.4	33.9	26.1	26.8	7.65	2.62
	Norflurazon	79.0	83.1	78.6	79.9	5.05	1.64
	Oxadiazon	76.4	79.2	76.4	75.2	3.61	1.55
	Oxyfluorfen	71.5	81.8	92.2	94.7	13.4	2.74
	Parathion Ethyl	91.1	90.9	91.7	91.9	0.198	0.244
	Parathion Methyl	103	108	116	109	5.48	6.15
	Pendimethalin	78.3	71.7	79.6	75.5	8.77	5.24
	Phorate	85.2	84.1	83.6	81.9	1.32	1.98
	Prodiamine	56.0	61.4	101	93.1	9.18	7.92
	Prometon	92.2	94.2	92.2	91.3	2.20	0.932
	Prometryn	79.8	86.4	84.4	86.3	7.86	2.14
	Pronamide	88.0	93.4	103	110	5.92	6.28
	Propiconazole	86.0	89.2	90.9	90.5	3.64	0.423
	Pyriproxyfen	32.6	59.9	42.7	40.1	59.1	6.33
	Simazine	85.5	86.3	84.3	78.7	0.862	3.91
	Sulfentrazone	107	114	130	116	6.70	10.8
	Tebuconazole	91.9	96.5	96.2	96.9	4.82	0.563
	Terbufos	103	103	112	113	0.688	1.05
	Terbuthylazine	85.8	89.0	87.0	84.7	3.64	2.70
EPA 8321B	2,4-D	120		129	127		2.03
	2,4,5-T	113		127	116		8.95
	Acesulfame K	79.9		92.0	87.2		5.41
	Acetaminophen	124		109	97.8		11.1
	Acetamiprid	79.2		89.5	79.4		11.9
	Afidopyropen	19.5		82.4	78.4		5.02
	AMPA	97.0		83.8	82.9		1.08
	Bentazon	87.9		50.6	60.9		4.64

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Benzovindiflupyr	87.7	89.8	88.8		
	Carbamazepine	93.8	106	99.3		
	Clothianidin	72.2	91.9	90.8		
	Dinotefuran	81.6				
	Diuron	80.5	83.7	64.4		
	Endothall	70.3	74.4	78.0		
	Fenuron	90.6	89.4	86.5		
	Fluridone	88.8	84.1	87.3		
	Glufosinate	109	91.9	96.6		
	Glyphosate	86.6	66.5	70.7		
	Hydrocodone	83.6	92.2	87.8		
	Ibuprofen	84.9	86.2	72.8		
	Imazapyr	96.3	91.6	96.4		
	Imidacloprid	92.1	123	122		
	Linuron	79.9	91.8	85.8		
	Mandestrobin	86.8	81.9	86.8		
	MCPP	121	126	129		
	Naproxen	72.1	89.1	67.6		
	Primidone	84.8	86.5	99.7		
	Pyraclostrobin	82.9	83.0	81.6		
	Sucralose	91.2	88.1	101		
	Thiamethoxam	88.5	119	122		
	Tolfenpyrad	46.3	48.3	56.3		
	Triclopyr	102	110	121		
SM 2120 B-2011	Color (true)	101				2.19
SM 2320 B-2011	Total Alkalinity	100				0.532
SM 2540 C-2011	TDS					8.89
SM 4500 F-C-2011	Fluoride	102	101	102		
SM 5310 B-2011	Organic Carbon	96.2	98.9	99.2		

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2284220
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2284226
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2284226
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2284220
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2284220
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2284221
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2284221
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2284221
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2284221
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2284222
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2284227
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2284225
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2284220
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2284220
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2284226
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2284220
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2284220

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)	2284220
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2284221

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	10/18/2021			10/19/2021 16:16	Khloe J Berg	2284220
EPA 200.7 Rev. 4.4	10/18/2021	10/21/2021 10:00	Emily M Philpot	10/27/2021 17:37	Josef B Mick	2284226
EPA 200.8 Rev. 5.4	10/18/2021	10/21/2021 10:00	Emily M Philpot	10/22/2021 15:48	Alexander Thompson	2284226
	10/18/2021	10/21/2021 10:00	Emily M Philpot	10/25/2021 12:57	Alexander Thompson	2284226
EPA 300.0 Rev. 2.1	10/18/2021			10/20/2021 01:08	Roberta Tatti	2284220
EPA 350.1 Rev. 2.0	10/18/2021			10/26/2021 12:05	Ping Hua	2284221
EPA 351.2 Rev. 2.0	10/18/2021	10/20/2021 12:20	Benjamin T. Nordmann	10/21/2021 14:45	Alexandra J Mattheus	2284221
EPA 353.2 Rev. 2.0	10/18/2021			10/21/2021 10:38	Beverly Y. Sanders	2284221
EPA 365.1 Rev. 2.0	10/18/2021	10/20/2021 14:17	Simonne.V. Calhoun	10/22/2021 15:06	Lipi Saha	2284221
EPA 365.1 Rev. 2.0 dissolved	10/18/2021			10/19/2021 17:00	James L Waggeby	2284222
EPA 8270E	10/18/2021	10/20/2021 08:00	Fe-Val Siddell	10/22/2021 16:55	Michael Poppell	2284227
EPA 8321B	10/18/2021	10/21/2021 09:30	Juyoung Kim	10/21/2021 11:42	Juyoung Kim	2284225
	10/18/2021	10/21/2021 09:30	Juyoung Kim	10/22/2021 09:56	Manjita Shrestha	2284225
	10/18/2021	10/25/2021 09:00	Hoor Shaik	10/27/2021 18:04	Juyoung Kim	2284225
SM 2120 B-2011	10/18/2021			10/19/2021 16:44	Benjamin T. Nordmann	2284220
SM 2320 B-2011	10/18/2021			10/20/2021 22:35	Dale L. Simmons	2284220
SM 2340B	10/18/2021			10/27/2021 17:37	Josef B Mick	2284226
SM 2540 C-2011	10/18/2021			10/22/2021 15:35	Yijie Li	2284220
SM 2540 D-2011	10/18/2021			10/22/2021 15:35	Yijie Li	2284220
SM 4500 F-C-2011	10/18/2021			10/20/2021 22:35	Dale L. Simmons	2284220
SM 5310 B-2011	10/18/2021			10/25/2021 21:11	Khloe J Berg	2284221