

Chemical Analysis Report

WAS-SECT-2019-08-07-01

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

Event Description: **SCI 7**
Request ID: **RQ-2019-05-06-33**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 03-SEP-2019 14:36



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: Unnamed Run Upstream of Henrietta Dr.

Collection Date/Time: 08/07/2019 14:03

Field ID: G1WA0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109496	EPA 180.1 Rev. 2.0	Turbidity	2.6	A	NTU	P368635	
	EPA 300.0 Rev. 2.1	Chloride	1.5		mg Cl/L	P369214	
		Sulfate	0.44	I	mg SO4/L	P369217	
	SM 2120 B	Color (true)	52		PCU	P368725	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P369141	
	SM 2540 C-97	TDS	15	I	mg/L	P369209	
	SM 2540 D-97	TSS	2	I	mg/L	P369317	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P369145	
2109497	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P369164	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P369041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.63		mg N/L	P368953	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P368785	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P368814	
2109498	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P368630	
2109501	EPA 8321B	2,4-D	0.0020	U	ug/L	P368497	
		Acesulfame K**	0.10	U	ug/L	P368683	
		AMPA**	0.10	U	ug/L	P368683	
		Sucralose**	0.031	I	ug/L	P368683	
		Acetaminophen**	0.0080	U	ug/L	P368497	
		Endothall**	0.25	U	ug/L	P368683	
		Glufosinate**	0.10	U	ug/L	P368683	
		Glyphosate**	0.10	U	ug/L	P368683	
		Bentazon	8.0E-04	U	ug/L	P368497	
		Carbamazepine**	8.0E-04	U	ug/L	P368497	
		Diuron	0.0020	U	ug/L	P368497	
		Fenuron	0.016	U	ug/L	P368497	
		Fluridone**	8.0E-04	U	ug/L	P368497	
		Imazapyr**	0.0054	I	ug/L	P368497	MS
		Hydrocodone**	0.0020	U	ug/L	P368497	
		Ibuprofen**	0.020	U	ug/L	P368497	
		Imidacloprid	0.0020	U	ug/L	P368497	MS
		Linuron	0.0040	U	ug/L	P368497	
		MCP	0.0020	U	ug/L	P368497	MS
		Naproxen**	0.0080	U	ug/L	P368497	
		Primidone**	0.0040	U	ug/L	P368497	
		Pyraclostrobin**	0.0020	U	ug/L	P368497	
		Triclopyr**	0.0040	U	ug/L	P368497	
2109502	EPA 200.7 Rev. 4.4	Barium	10.0		ug/L	P368724	
		Calcium	0.47		mg/L	P368724	
		Iron	54	I	ug/L	P368724	
		Magnesium	0.55		mg/L	P368724	
		Potassium	0.30	U	mg/L	P368724	
		Sodium	1.6	I	mg/L	P368724	

Field ID: G1WA0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109502	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P368724	
		Aluminum	141		ug/L	P369671	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P369671	
		Arsenic	0.11	I	ug/L	P369671	
		Boron**	6.1	I	ug/L	P369671	
		Cadmium	0.020	U	ug/L	P369671	
		Chromium	0.40	U	ug/L	P369671	
		Copper	0.40	U	ug/L	P369671	
		Lead	0.20	U	ug/L	P369671	
		Nickel	0.50	U	ug/L	P369671	
		Selenium	0.20	U	ug/L	P369671	
		Silver	0.010	U	ug/L	P369671	
		Thallium	0.10	U	ug/L	P369671	
2109503	EPA 8270E	Acetochlor	0.28	U	ng/L	P368795	
		Alachlor	0.28	U	ng/L	P368795	
		Ametryn	0.67	U	ng/L	P368795	
		Atrazine	0.28	U	ng/L	P368795	
		Atrazine Desethyl	1.7	U	ng/L	P368795	
		Azinphos Methyl	5.6	U	ng/L	P368795	
		Bromacil	0.56	U	ng/L	P368795	
		Butylate	0.45	U	ng/L	P368795	
		Chlorpyrifos Ethyl	0.28	U	ng/L	P368795	
		Chlorpyrifos Methyl	0.11	U	ng/L	P368795	
		Cyanazine	3.6	UJ	ng/L	P368795	CCV
		Demeton	7.8	U	ng/L	P368795	
		Diazinon	0.14	U	ng/L	P368795	
		Dimethenamid**	0.11	UJ	ng/L	P368795	MS, RPD
		Disulfoton	0.56	UJ	ng/L	P368795	RPD
		Dithiopyr**	0.11	U	ng/L	P368795	
		EPTC	1.4	U	ng/L	P368795	
		Ethion	0.17	U	ng/L	P368795	
		Ethoprop	0.11	U	ng/L	P368795	
		Fenamiphos	0.56	U	ng/L	P368795	
		Fipronil	0.28	U	ng/L	P368795	
		Fipronil Desulfinyl**	0.14	U	ng/L	P368795	
		Fipronil Sulfide	0.17	U	ng/L	P368795	
		Fipronil Sulfone	0.17	U	ng/L	P368795	
		Fonofos	0.22	U	ng/L	P368795	
		Hexazinone	6.5		ng/L	P368795	
		Malathion	0.39	UJ	ng/L	P368795	MS
		Metalaxyl	0.34	U	ng/L	P368795	
		Metolachlor	0.56	U	ng/L	P368795	
		Metribuzin	0.84	UJ	ng/L	P368795	MS
		Mevinphos	0.56	U	ng/L	P368795	
		Molinate	0.34	U	ng/L	P368795	

Field ID: G1WA0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109503	EPA 8270E	Norflurazon	0.57	I	ng/L	P368795	
		Oxadiazon**	0.11	U	ng/L	P368795	
		Parathion Ethyl	0.28	U	ng/L	P368795	
		Parathion Methyl	0.61	U	ng/L	P368795	
		Pendimethalin	1.1	U	ng/L	P368795	
		Phorate	0.28	U	ng/L	P368795	
		Prodiamine**	0.20	U	ng/L	P368795	
		Prometon	1.0	UJ	ng/L	P368795	MS, RPD
		Prometryn	0.22	U	ng/L	P368795	
		Simazine	0.56	U	ng/L	P368795	
		Tebuconazole**	0.56	UJ	ng/L	P368795	MS, RPD
		Terbufos	0.11	U	ng/L	P368795	
		Terbutylazine	0.47	U	ng/L	P368795	

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

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368635

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368724

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369671

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369214

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369217

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369164

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369041

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368953

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368630

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

Reference Method: EPA 8270E
Batch ID: P368795

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	5.0	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	7.0	U	ng/L
Diazinon	0.12	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.30	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P368795

Component	Result	Code	Units
Metolachlor	0.50	U	ng/L
Metribuzin	0.75	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	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 8321B

Batch ID: P368497

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P368683

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P368725

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P369141

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

Reference Method: SM 2540 C-97
Batch ID: P369209

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369317

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369145

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368814

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: P368724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	100		P	85 - 115
Iron	100		P	85 - 115
Magnesium	99.9		P	85 - 115
Potassium	106		P	85 - 115
Sodium	102		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P369671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.6		P	85 - 115
Antimony	99.0		P	85 - 115
Arsenic	104		P	85 - 115
Boron	98.4		P	85 - 115
Cadmium	99.4		P	85 - 115
Chromium	101		P	85 - 115
Copper	100		P	85 - 115
Lead	101		P	85 - 115
Nickel	98.6		P	85 - 115
Selenium	101		P	85 - 115
Silver	105		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P369214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P369217

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P369164

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P369041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.8		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P368953

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P368785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P368630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P368795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	96.8	87.1	P/P	69 - 122
Alachlor	90.6	80.4	P/P	71 - 120
Ametryn	92.1	71.3	P/P	47 - 138
Atrazine	100	99.5	P/P	74 - 124
Atrazine Desethyl	89.9	95.0	P/P	38 - 138
Azinphos Methyl	128	122	P/P	69 - 154
Bromacil	44.9	43.0	P/P	39 - 121
Butylate	57.7	47.0	P/P	27 - 87.0
Chlorpyrifos Ethyl	94.0	90.4	P/P	69 - 118
Chlorpyrifos Methyl	101	96.9	P/P	70 - 120
Cyanazine	236	248	P/P	20 - 250
Demeton	66.1	50.0	P/P	39 - 118
Diazinon	107	96.9	P/P	68 - 127
Dimethenamid	90.3	75.9	P/P	66 - 125
Disulfoton	78.5	57.2	P/P	52 - 126
Dithiopyr	92.8	80.7	P/P	67 - 127
EPTC	59.5	45.5	P/P	24 - 88.0
Ethion	95.7	87.2	P/P	51 - 132
Ethoprop	99.7	88.8	P/P	58 - 117
Fenamiphos	49.9	55.6	P/P	38 - 139
Fipronil	94.2	71.6	P/P	61 - 124
Fipronil Desulfinyl	91.4	80.5	P/P	47 - 120
Fipronil Sulfide	89.8	80.3	P/P	56 - 119
Fipronil Sulfone	89.6	78.1	P/P	50 - 117
Fonofos	95.5	90.0	P/P	60 - 121
Hexazinone	98.5	99.1	P/P	55 - 137
Malathion	102	89.6	P/P	66 - 126
Metalaxyl	98.2	87.3	P/P	33 - 140
Metolachlor	91.4	82.7	P/P	69 - 119
Metribuzin	189	197	P/P	31 - 238
Mevinphos	91.9	81.0	P/P	42 - 113
Molinate	75.4	70.0	P/P	32 - 96.0
Norflurazon	96.9	84.6	P/P	54 - 123
Oxadiazon	91.0	82.8	P/P	63 - 128

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P368795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	99.0	86.6	P/P	72 - 111
Parathion Methyl	107	96.9	P/P	74 - 126
Pendimethalin	88.5	82.4	P/P	61 - 131
Phorate	95.3	86.6	P/P	51 - 115
Prodiamine	84.1	77.7	P/P	38 - 144
Prometon	85.5	79.4	P/P	54 - 119
Prometryn	93.3	83.0	P/P	63 - 120
Simazine	108	106	P/P	75 - 126
Tebuconazole	70.5	50.0	P/P	20 - 119
Terbufos	93.6	86.5	P/P	64 - 116
Terbuthylazine	100	91.0	P/P	73 - 117

Reference Method: EPA 8321B

Batch ID: P368497

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 160
Acetaminophen	76.9		P	30 - 160
Bentazon	144		P	30 - 160
Carbamazepine	94.5		P	40 - 160
Diuron	77.9		P	40 - 160
Fenuron	102		P	40 - 160
Fluridone	86.7		P	40 - 160
Hydrocodone	90.3		P	40 - 160
Ibuprofen	82.9		P	30 - 160
Imazapyr	100		P	40 - 160
Imidacloprid	88.8		P	40 - 160
Linuron	71.3		P	40 - 160
MCPP	115		P	40 - 160
Naproxen	99.4		P	40 - 160
Primidone	67.6		P	40 - 160
Pyraclostrobin	72.9		P	30 - 160
Triclopyr	92.8		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P368683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.2		P	40 - 150
AMPA	122		P	40 - 150
Endothall	144		P	40 - 150
Glufosinate	96.3		P	40 - 150
Glyphosate	111		P	40 - 140
Sucralose	96.0		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P368725

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P369141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P369145

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368814

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P368724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108886	Barium	99.3		P	80 - 120
2108886	Calcium	95.1		P	80 - 120
2108886	Iron	101		P	80 - 120
2108886	Magnesium	101		P	80 - 120
2108886	Potassium	108		P	80 - 120
2108886	Sodium	115		P	80 - 120
2108886	Zinc	98.1		P	80 - 120
2109519	Barium	99.9	99.9	P/P	80 - 120
2109519	Calcium	98.7		P	80 - 120
2109519	Iron	99.8	102	P/P	80 - 120
2109519	Magnesium	97.0		P	80 - 120
2109519	Potassium	105	107	P/P	80 - 120
2109519	Sodium	111	110	P/P	80 - 120
2109519	Zinc	97.9	97.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P369671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108885	Aluminum	98.0	100	P/P	80 - 120
2108885	Antimony	99.8	100	P/P	80 - 120
2108885	Arsenic	99.9	101	P/P	80 - 120
2108885	Boron	94.5	99.8	P/P	80 - 120
2108885	Cadmium	99.8	103	P/P	80 - 120
2108885	Chromium	102	103	P/P	80 - 120
2108885	Copper	98.3	99.9	P/P	80 - 120
2108885	Lead	99.9	101	P/P	80 - 120
2108885	Nickel	89.4	93.8	P/P	80 - 120
2108885	Selenium	97.7	98.4	P/P	80 - 120
2108885	Silver	104	105	P/P	80 - 120
2108885	Thallium	103	105	P/P	80 - 120
2109520	Aluminum	97.5		P	80 - 120
2109520	Antimony	102		P	80 - 120
2109520	Arsenic	101		P	80 - 120
2109520	Boron	99.1		P	80 - 120
2109520	Cadmium	101		P	80 - 120
2109520	Chromium	99.7		P	80 - 120
2109520	Copper	94.6		P	80 - 120
2109520	Lead	99.3		P	80 - 120
2109520	Nickel	93.2		P	80 - 120
2109520	Selenium	98.2		P	80 - 120
2109520	Silver	105		P	80 - 120
2109520	Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P369214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109470	Chloride	96.0	96.7	P/P	90 - 110
2109597	Chloride	95.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109470	Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109474	Ammonia-N	109	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109540	Kjeldahl Nitrogen	109	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109446	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109514	Total-P	95.2	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109448	O-Phosphate-P	94.7	95.2	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P368795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109503	Acetochlor	90.7	74.7	P/P	63 - 129
2109503	Alachlor	84.3	78.7	P/P	65 - 127
2109503	Ametryn	93.0	77.9	P/P	40 - 164
2109503	Atrazine	105	101	P/P	66 - 135
2109503	Atrazine Desethyl	106	112	P/P	14 - 157
2109503	Azinphos Methyl	119	91.0	P/P	49 - 180
2109503	Bromacil	77.7	70.7	P/P	48 - 130
2109503	Butylate	50.1	55.6	P/P	10 - 94.0
2109503	Chlorpyrifos Ethyl	91.3	82.1	P/P	58 - 123
2109503	Chlorpyrifos Methyl	96.6	90.1	P/P	58 - 125
2109503	Cyanazine	245	242	P/P	24 - 253
2109503	Demeton	81.1	79.6	P/P	25 - 149
2109503	Diazinon	103	97.7	P/P	59 - 144
2109503	Dimethenamid	79.3	39.9	P/F	46 - 139
2109503	Disulfoton	95.9	79.8	P/P	54 - 132
2109503	Dithiopyr	87.9	76.7	P/P	64 - 130

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P368795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109503	EPTC	45.2	58.9	P/P	10 - 92.0
2109503	Ethion	88.0	72.2	P/P	30 - 148
2109503	Ethoprop	98.1	105	P/P	50 - 130
2109503	Fenamiphos	57.5	54.4	P/P	49 - 142
2109503	Fipronil	78.0	74.5	P/P	46 - 140
2109503	Fipronil Desulfinyl	86.7	78.4	P/P	30 - 121
2109503	Fipronil Sulfide	83.6	79.7	P/P	31 - 136
2109503	Fipronil Sulfone	79.0	62.1	P/P	16 - 136
2109503	Fonofos	96.5	101	P/P	55 - 129
2109503	Hexazinone	92.1	81.6	P/P	56 - 141
2109503	Malathion	48.0	64.8	F/P	56 - 135
2109503	Metalaxyl	93.6	83.7	P/P	54 - 135
2109503	Metolachlor	86.0	72.1	P/P	51 - 140
2109503	Metribuzin	239	294	P/F	45 - 254
2109503	Mevinphos	92.8	79.4	P/P	33 - 131
2109503	Molinate	67.7	64.0	P/P	14 - 98.0
2109503	Norflurazon	87.9	76.6	P/P	34 - 136
2109503	Oxadiazon	86.1	74.1	P/P	67 - 116
2109503	Parathion Ethyl	91.8	90.1	P/P	66 - 118
2109503	Parathion Methyl	99.9	99.4	P/P	64 - 136
2109503	Pendimethalin	85.9	83.1	P/P	59 - 144
2109503	Phorate	98.6	99.5	P/P	42 - 130
2109503	Prodiamine	96.4	85.5	P/P	42 - 148
2109503	Prometon	87.1	48.2	P/F	59 - 134
2109503	Prometryn	90.5	81.2	P/P	54 - 135
2109503	Simazine	110	106	P/P	53 - 156
2109503	Tebuconazole	16.3	4.62	P/F	10 - 131
2109503	Terbufos	99.7	102	P/P	57 - 131
2109503	Terbutylazine	99.1	92.2	P/P	68 - 125

Reference Method: EPA 8321B

Batch ID: P368497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109232	2,4-D	143	150	P/P	40 - 160
2109232	Acetaminophen	92.4	95.9	P/P	30 - 160
2109232	Bentazon	106	106	P/P	30 - 160
2109232	Carbamazepine	111	132	P/P	40 - 160
2109232	Diuron	90.0	103	P/P	40 - 160
2109232	Fenuron	105	124	P/P	40 - 160
2109232	Fluridone	90.6	108	P/P	40 - 160
2109232	Hydrocodone	116	134	P/P	40 - 160
2109232	Ibuprofen	96.6	113	P/P	30 - 160
2109232	Imazapyr	161	181	F/F	40 - 160
2109232	Imidacloprid	155	183	P/F	40 - 160
2109232	Linuron	76.8	91.8	P/P	40 - 160
2109232	MCP	169	175	F/F	40 - 160
2109232	Naproxen	90.6	109	P/P	40 - 160
2109232	Primidone	96.8	121	P/P	40 - 160
2109232	Pyraclostrobin	85.8	88.2	P/P	30 - 160
2109232	Triclopyr	122	104	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P368683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109110	Acesulfame K	63.6	83.3	P/P	40 - 150
2109110	AMPA	96.7	88.3	P/P	40 - 150
2109110	Endothall	112	115	P/P	40 - 150
2109110	Glufosinate	104	103	P/P	40 - 150
2109110	Glyphosate	77.0	94.5	P/P	40 - 140
2109110	Sucralose	97.7	92.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P369145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109510	Fluoride	98.3	97.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109514	Organic Carbon	99.8	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P368635

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109496	Turbidity	0.781	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P368724

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109519	Barium	0.0479	Spike	P	0 - 20
2109519	Calcium	0.0511	Spike	P	0 - 20
2109519	Iron	2.04	Spike	P	0 - 20
2109519	Magnesium	1.48	Spike	P	0 - 20
2109519	Potassium	1.71	Spike	P	0 - 20
2109519	Sodium	0.276	Spike	P	0 - 20
2109519	Zinc	0.597	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P369671

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108885	Aluminum	1.78	Spike	P	0 - 20
2108885	Antimony	0.454	Spike	P	0 - 20
2108885	Arsenic	1.44	Spike	P	0 - 20
2108885	Boron	5.05	Spike	P	0 - 20
2108885	Cadmium	3.00	Spike	P	0 - 20
2108885	Chromium	0.782	Spike	P	0 - 20
2108885	Copper	1.68	Spike	P	0 - 20
2108885	Lead	0.913	Spike	P	0 - 20
2108885	Nickel	4.47	Spike	P	0 - 20
2108885	Selenium	0.654	Spike	P	0 - 20
2108885	Silver	1.18	Spike	P	0 - 20
2108885	Thallium	2.46	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P369214

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109470	Chloride	0.616	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P369217

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109470	Sulfate	0.283	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109474	Ammonia-N	0.999	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109540	Kjeldahl Nitrogen	5.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109446	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109514	Total-P	2.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109448	O-Phosphate-P	0.501	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P368795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109503	Acetochlor	19.4	Spike	P	0 - 30
2109503	Alachlor	6.95	Spike	P	0 - 30
2109503	Ametryn	17.7	Spike	P	0 - 30
2109503	Atrazine	3.53	Spike	P	0 - 30
2109503	Atrazine Desethyl	5.99	Spike	P	0 - 30
2109503	Azinphos Methyl	26.4	Spike	P	0 - 30
2109503	Bromacil	9.41	Spike	P	0 - 30
2109503	Butylate	10.4	Spike	P	0 - 30
2109503	Chlorpyrifos Ethyl	10.6	Spike	P	0 - 30
2109503	Chlorpyrifos Methyl	6.98	Spike	P	0 - 30
2109503	Cyanazine	1.04	Spike	P	0 - 30
2109503	Demeton	1.91	Spike	P	0 - 30
2109503	Diazinon	5.28	Spike	P	0 - 30
2109503	Dimethenamid	66.0	Spike	F	0 - 30
2109503	Disulfoton	18.4	Spike	P	0 - 30
2109503	Dithiopyr	13.6	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P368795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109503	EPTC	26.3	Spike	P	0 - 30
2109503	Ethion	19.7	Spike	P	0 - 30
2109503	Ethoprop	7.25	Spike	P	0 - 30
2109503	Fenamiphos	5.58	Spike	P	0 - 30
2109503	Fipronil	4.59	Spike	P	0 - 30
2109503	Fipronil Desulfinyl	10.1	Spike	P	0 - 30
2109503	Fipronil Sulfide	4.81	Spike	P	0 - 30
2109503	Fipronil Sulfone	23.9	Spike	P	0 - 30
2109503	Fonofos	4.24	Spike	P	0 - 30
2109503	Hexazinone	7.84	Spike	P	0 - 30
2109503	Malathion	29.9	Spike	P	0 - 30
2109503	Metaxyl	11.1	Spike	P	0 - 30
2109503	Metolachlor	17.5	Spike	P	0 - 30
2109503	Metribuzin	20.5	Spike	P	0 - 30
2109503	Mevinphos	15.5	Spike	P	0 - 30
2109503	Molinate	5.61	Spike	P	0 - 30
2109503	Norflurazon	13.1	Spike	P	0 - 30
2109503	Oxadiazon	15.0	Spike	P	0 - 30
2109503	Parathion Ethyl	1.84	Spike	P	0 - 30
2109503	Parathion Methyl	0.590	Spike	P	0 - 30
2109503	Pendimethalin	3.22	Spike	P	0 - 30
2109503	Phorate	0.922	Spike	P	0 - 30
2109503	Prodiamine	12.0	Spike	P	0 - 30
2109503	Prometon	57.5	Spike	F	0 - 30
2109503	Prometryn	10.9	Spike	P	0 - 30
2109503	Simazine	3.84	Spike	P	0 - 30
2109503	Tebuconazole	112	Spike	F	0 - 30
2109503	Terbufos	2.67	Spike	P	0 - 30
2109503	Terbutylazine	7.16	Spike	P	0 - 30
LFB	Acetochlor	10.5	LCS	P	0 - 30
LFB	Alachlor	11.9	LCS	P	0 - 30
LFB	Ametryn	25.5	LCS	P	0 - 30
LFB	Atrazine	0.443	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.60	LCS	P	0 - 30
LFB	Azinphos Methyl	5.06	LCS	P	0 - 30
LFB	Bromacil	4.22	LCS	P	0 - 30
LFB	Butylate	20.5	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	3.92	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	4.35	LCS	P	0 - 30
LFB	Cyanazine	4.84	LCS	P	0 - 30
LFB	Demeton	27.7	LCS	P	0 - 30
LFB	Diazinon	9.55	LCS	P	0 - 30
LFB	Dimethenamid	17.3	LCS	P	0 - 30
LFB	Disulfoton	31.3	LCS	F	0 - 30
LFB	Dithiopyr	14.0	LCS	P	0 - 30
LFB	EPTC	26.6	LCS	P	0 - 30
LFB	Ethion	9.31	LCS	P	0 - 30
LFB	Ethoprop	11.5	LCS	P	0 - 30
LFB	Fenamiphos	10.9	LCS	P	0 - 30
LFB	Fipronil	27.3	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	12.8	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P368795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	11.2	LCS	P	0 - 30
LFB	Fipronil Sulfone	13.8	LCS	P	0 - 30
LFB	Fonofos	5.92	LCS	P	0 - 30
LFB	Hexazinone	0.574	LCS	P	0 - 30
LFB	Malathion	12.8	LCS	P	0 - 30
LFB	Metalaxyl	11.8	LCS	P	0 - 30
LFB	Metolachlor	9.98	LCS	P	0 - 30
LFB	Metribuzin	4.10	LCS	P	0 - 30
LFB	Mevinphos	12.6	LCS	P	0 - 30
LFB	Molinate	7.44	LCS	P	0 - 30
LFB	Norflurazon	13.5	LCS	P	0 - 30
LFB	Oxadiazon	9.39	LCS	P	0 - 30
LFB	Parathion Ethyl	13.3	LCS	P	0 - 30
LFB	Parathion Methyl	10.4	LCS	P	0 - 30
LFB	Pendimethalin	7.14	LCS	P	0 - 30
LFB	Phorate	9.57	LCS	P	0 - 30
LFB	Prodiamine	7.86	LCS	P	0 - 30
LFB	Prometon	7.41	LCS	P	0 - 30
LFB	Prometryn	11.8	LCS	P	0 - 30
LFB	Simazine	2.39	LCS	P	0 - 30
LFB	Tebuconazole	34.1	LCS	F	0 - 30
LFB	Terbufos	7.96	LCS	P	0 - 30
LFB	Terbuthylazine	9.52	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P368497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109232	2,4-D	5.08	Spike	P	0 - 30
2109232	Acetaminophen	3.74	Spike	P	0 - 30
2109232	Bentazon	0.515	Spike	P	0 - 30
2109232	Carbamazepine	15.8	Spike	P	0 - 30
2109232	Diuron	12.6	Spike	P	0 - 30
2109232	Fenuron	17.2	Spike	P	0 - 30
2109232	Fluridone	16.4	Spike	P	0 - 30
2109232	Hydrocodone	14.2	Spike	P	0 - 30
2109232	Ibuprofen	15.8	Spike	P	0 - 30
2109232	Imazapyr	11.6	Spike	P	0 - 30
2109232	Imidacloprid	16.0	Spike	P	0 - 30
2109232	Linuron	17.8	Spike	P	0 - 30
2109232	MCP	3.28	Spike	P	0 - 30
2109232	Naproxen	18.2	Spike	P	0 - 30
2109232	Primidone	22.4	Spike	P	0 - 30
2109232	Pyraclostrobin	2.80	Spike	P	0 - 30
2109232	Triclopyr	15.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P368683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109110	Acesulfame K	26.9	Spike	P	0 - 30
2109110	AMPA	6.28	Spike	P	0 - 30
2109110	Endothall	2.75	Spike	P	0 - 30
2109110	Glufosinate	1.06	Spike	P	0 - 30
2109110	Glyphosate	16.9	Spike	P	0 - 30
2109110	Sucralose	5.16	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P368725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109564	Color (true)	2.21	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P369141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109510	Total Alkalinity	0.757	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P369209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109508	TDS	2.27	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P369145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109510	Fluoride	0.479	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P368814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109514	Organic Carbon	0.536	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2109501
Field Sample ID: G1WA0078

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	89.6	P	30 - 160
EPA 8321B	Endothall-d6	157	P	30 - 160
EPA 8321B	Endothall-d6	157	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	130	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	130	P	30 - 160
EPA 8321B	Ibuprofen-d3	108	P	30 - 160
EPA 8321B	Primidone-d5	93.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.6	P	30 - 160
EPA 8321B	Sucralose-d6	95.6	P	30 - 160

Lab Sample ID: 2109503
Field Sample ID: G1WA0078

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	104	P	68 - 130
EPA 8270E	Terbufos-d10	89.2	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93339

Included Lab Sample IDs: 2109498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	97.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93340

Included Lab Sample IDs: 2109496

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A93368

Included Lab Sample IDs: 2109496

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

Reference Method: SM 5310 B-00

Run ID: A93412

Included Lab Sample IDs: 2109497

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

Reference Method: EPA 8321B

Run ID: A93429

Included Lab Sample IDs: 2109501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	89.1	93.1	P/P	60 - 160
Endothall	153	155	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93431

Included Lab Sample IDs: 2109501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.7	121	P/P	60 - 160
Glufosinate	77.8	103	P/P	60 - 160
Glyphosate	83.0	122	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93438

Included Lab Sample IDs: 2109502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	97.4	98.2	P/P	90 - 110
Iron	98.3	99.0	P/P	90 - 110
Magnesium	97.4	98.5	P/P	90 - 110
Potassium	99.7	99.1	P/P	90 - 110
Sodium	107	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93438

Included Lab Sample IDs: 2109502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	98.9	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93462

Included Lab Sample IDs: 2109497

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93467

Included Lab Sample IDs: 2109497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93483

Included Lab Sample IDs: 2109501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	109	P/P	50 - 150
Acetaminophen	82.2	85.7	P/P	60 - 160
Bentazon	74.4	108	P/P	50 - 160
Carbamazepine	83.1	90.2	P/P	60 - 150
Diuron	89.5	85.9	P/P	60 - 150
Fenuron	91.5	89.9	P/P	60 - 150
Fluridone	95.6	90.0	P/P	60 - 160
Hydrocodone	89.6	87.3	P/P	60 - 150
Ibuprofen	102	76.8	P/P	50 - 160
Imazapyr	88.6	92.9	P/P	50 - 150
Imidacloprid	91.2	87.7	P/P	60 - 150
Linuron	87.3	82.6	P/P	60 - 150
MCPP	101	94.1	P/P	50 - 150
Naproxen	141	128	P/P	50 - 160
Primidone	94.3	83.2	P/P	60 - 150
Pyraclostrobin	86.5	81.4	P/P	60 - 150
Triclopyr	104	101	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93486

Included Lab Sample IDs: 2109496

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	96.0	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A93545
 Included Lab Sample IDs: 2109496

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

Reference Method: SM 4500 F-C-97
 Run ID: A93545
 Included Lab Sample IDs: 2109496

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A93563
 Included Lab Sample IDs: 2109497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A93579
 Included Lab Sample IDs: 2109497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.9	103	P/P	90 - 110

Reference Method: EPA 8270E
 Run ID: A93584
 Included Lab Sample IDs: 2109503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	103		P	80 - 120
Ametryn	97.4		P	80 - 120
Atrazine	101		P	80 - 120
Atrazine Desethyl	87.3		P	80 - 120
Azinphos Methyl	104		P	80 - 120
Bromacil	102		P	80 - 120
Butylate	94.9		P	80 - 120
Chlorpyrifos Ethyl	99.2		P	80 - 120
Chlorpyrifos Methyl	98.6		P	80 - 120
Cyanazine	76.7*		F	80 - 120
Demeton	99.4		P	80 - 120
Diazinon	99.9		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	98.0		P	80 - 120
Dithiopyr	101		P	80 - 120
EPTC	99.2		P	80 - 120
Ethion	98.3		P	80 - 120
Ethoprop	97.3		P	80 - 120
Fenamiphos	97.2		P	80 - 120
Fipronil	99.2		P	80 - 120
Fipronil Desulfinyl	103		P	80 - 120
Fipronil Sulfide	98.9		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A93584

Included Lab Sample IDs: 2109503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fipronil Sulfone	99.9		P	80 - 120
Fonofos	95.1		P	80 - 120
Hexazinone	98.2		P	80 - 120
Malathion	103		P	80 - 120
Metalaxyl	104		P	80 - 120
Metolachlor	109		P	80 - 120
Metribuzin	80.6		P	80 - 120
Mevinphos	101		P	80 - 120
Molinate	99.6		P	80 - 120
Norflurazon	100		P	80 - 120
Oxadiazon	106		P	80 - 120
Parathion Ethyl	95.6		P	80 - 120
Parathion Methyl	96.2		P	80 - 120
Pendimethalin	96.7		P	80 - 120
Phorate	95.5		P	80 - 120
Prodiamine	102		P	80 - 120
Prometon	100		P	80 - 120
Prometryn	102		P	80 - 120
Simazine	97.2		P	80 - 120
Tebuconazole	101		P	80 - 120
Terbufos	96.5		P	80 - 120
Terbutylazine	99.3		P	80 - 120

Reference Method: EPA 8321B

Run ID: A93638

Included Lab Sample IDs: 2109501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.2	93.7	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93823

Included Lab Sample IDs: 2109502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	96.8	P/P	90 - 110
Antimony	97.0	96.3	P/P	90 - 110
Arsenic	98.1	98.1	P/P	90 - 110
Cadmium	98.4	97.6	P/P	90 - 110
Chromium	100	99.6	P/P	90 - 110
Copper	97.1	97.6	P/P	90 - 110
Lead	99.6	99.8	P/P	90 - 110
Selenium	97.0	96.5	P/P	90 - 110
Silver	106	105	P/P	90 - 110
Thallium	96.9	97.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93935

Included Lab Sample IDs: 2109502

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: A93935

Included Lab Sample IDs: 2109502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	97.9	97.3	P/P	90 - 110
Nickel	95.1	94.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							0.781	
EPA 200.7 Rev. 4.4	Barium	100		99.3	99.9	99.9			0.0479
	Calcium	100		95.1	98.7				0.0511
	Iron	100		101	99.8	102			2.04
	Magnesium	99.9		101	97.0				1.48
	Potassium	106		108	105	107			1.71
	Sodium	102		115	111	110			0.276
	Zinc	98.5		98.1	97.9	97.3			0.597
EPA 200.8 Rev. 5.4	Aluminum	99.6		98.0	100	97.5			1.78
	Antimony	99.0		99.8	100	102			0.454
	Arsenic	104		99.9	101	101			1.44
	Boron	98.4		94.5	99.8	99.1			5.05
	Cadmium	99.4		99.8	103	101			3.00
	Chromium	101		102	103	99.7			0.782
	Copper	100		98.3	99.9	94.6			1.68
	Lead	101		99.9	101	99.3			0.913
	Nickel	98.6		89.4	93.8	93.2			4.47
	Selenium	101		97.7	98.4	98.2			0.654
	Silver	105		104	105	105			1.18
	Thallium	104		103	105	102			2.46
EPA 300.0 Rev. 2.1	Chloride	95.9		96.0	96.7	95.7			0.616
	Sulfate	100		101	101				0.283
EPA 350.1 Rev. 2.0	Ammonia-N	104		109	108				0.999
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.8		109	99.4				5.50
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5		98.0	98.5				0.466
EPA 365.1 Rev. 2.0	Total-P	100		95.2	98.6				2.49
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8		94.7	95.2				0.501
EPA 8270E	Acetochlor	87.1	96.8	90.7	74.7		10.5		19.4
	Alachlor	80.4	90.6	84.3	78.7		11.9		6.95
	Ametryn	92.1	71.3	93.0	77.9		25.5		17.7
	Atrazine	100	99.5	105	101		0.443		3.53
	Atrazine Desethyl	89.9	95.0	106	112		5.60		5.99
	Azinphos Methyl	128	122	119	91.0		5.06		26.4
	Bromacil	44.9	43.0	77.7	70.7		4.22		9.41
	Butylate	57.7	47.0	50.1	55.6		20.5		10.4
	Chlorpyrifos Ethyl	94.0	90.4	91.3	82.1		3.92		10.6
	Chlorpyrifos Methyl	96.9	101	96.6	90.1		4.35		6.98
	Cyanazine	248	236	245	242		4.84		1.04
	Demeton	66.1	50.0	81.1	79.6		27.7		1.91
	Diazinon	96.9	107	103	97.7		9.55		5.28
	Dimethenamid	75.9	90.3	79.3	39.9		17.3		66.0
	Disulfoton	57.2	78.5	95.9	79.8		31.3		18.4
	Dithiopyr	80.7	92.8	87.9	76.7		14.0		13.6
	EPTC	45.5	59.5	45.2	58.9		26.6		26.3
	Ethion	87.2	95.7	88.0	72.2		9.31		19.7
	Ethoprop	88.8	99.7	98.1	105		11.5		7.25
	Fenamiphos	55.6	49.9	57.5	54.4		10.9		5.58
	Fipronil	71.6	94.2	78.0	74.5		27.3		4.59
	Fipronil Desulfinyl	80.5	91.4	86.7	78.4		12.8		10.1
	Fipronil Sulfide	80.3	89.8	83.6	79.7		11.2		4.81
	Fipronil Sulfone	78.1	89.6	79.0	62.1		13.8		23.9
	Fonofos	95.5	90.0	96.5	101		5.92		4.24
	Hexazinone	98.5	99.1	92.1	81.6		0.574		7.84
	Malathion	102	89.6	48.0	64.8		12.8		29.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Metalaxyl	98.2	87.3	93.6	83.7	11.8	11.1
	Metolachlor	91.4	82.7	86.0	72.1	9.98	17.5
	Metribuzin	189	197	239	294	4.10	20.5
	Mevinphos	91.9	81.0	92.8	79.4	12.6	15.5
	Molinate	75.4	70.0	67.7	64.0	7.44	5.61
	Norflurazon	96.9	84.6	87.9	76.6	13.5	13.1
	Oxadiazon	91.0	82.8	86.1	74.1	9.39	15.0
	Parathion Ethyl	99.0	86.6	91.8	90.1	13.3	1.84
	Parathion Methyl	107	96.9	99.9	99.4	10.4	0.590
	Pendimethalin	88.5	82.4	85.9	83.1	7.14	3.22
	Phorate	95.3	86.6	98.6	99.5	9.57	0.922
	Prodiamine	84.1	77.7	96.4	85.5	7.86	12.0
	Prometon	85.5	79.4	87.1	48.2	7.41	57.5
	Prometryn	93.3	83.0	90.5	81.2	11.8	10.9
	Simazine	108	106	110	106	2.39	3.84
	Tebuconazole	70.5	50.0	16.3	4.62	34.1	112
	Terbufos	93.6	86.5	99.7	102	7.96	2.67
	Terbuthylazine	100	91.0	99.1	92.2	9.52	7.16
EPA 8321B	2,4-D	101		143	150		5.08
	Acesulfame K	74.2		63.6	83.3		26.9
	Acetaminophen	76.9		92.4	95.9		3.74
	AMPA	122		96.7	88.3		6.28
	Bentazon	144		106	106		0.515
	Carbamazepine	94.5		111	132		15.8
	Diuron	77.9		90.0	103		12.6
	Endothall	144		112	115		2.75
	Fenuron	102		105	124		17.2
	Fluridone	86.7		90.6	108		16.4
	Glufosinate	96.3		104	103		1.06
	Glyphosate	111		77.0	94.5		16.9
	Hydrocodone	90.3		116	134		14.2
	Ibuprofen	82.9		96.6	113		15.8
	Imazapyr	100		161	181		11.6
	Imidacloprid	88.8		155	183		16.0
	Linuron	71.3		76.8	91.8		17.8
	MCPP	115		169	175		3.28
	Naproxen	99.4		90.6	109		18.2
	Primidone	67.6		96.8	121		22.4
	Pyraclostrobin	72.9		85.8	88.2		2.80
	Sucralose	96.0		97.7	92.6		5.16
	Triclopyr	92.8		122	104		15.7
SM 2120 B	Color (true)	102				2.21	
SM 2320 B-97	Total Alkalinity	104				0.757	
SM 2540 C-97	TDS					2.27	
SM 4500 F-C-97	Fluoride	97.0		98.3	97.8		0.479
SM 5310 B-00	Organic Carbon	100		99.8	100		0.536

Reference Method Descriptions

Method / DoH Cert #
EPA 180.1 Rev. 2.0 /
E31780

Description
Turbidity in aqueous matrices

Associated Samples
2109496

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2109502
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2109502
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2109496
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2109496
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2109497
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2109497
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2109497
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2109497
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2109498
EPA 8270E / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2109503
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2109501
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2109501
SM 2120 B / E31780	True Color measured at 450 nm	2109496
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2109496
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2109496
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2109496
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2109496
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2109497

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/07/2019			08/07/2019 17:10	Rosalyn Ballman	2109496
EPA 200.7 Rev. 4.4	08/07/2019	08/08/2019 17:10	Elliott D. Healy	08/12/2019 19:25	Betina Topolski	2109502
EPA 200.8 Rev. 5.4	08/07/2019	08/26/2019 15:30	Elliott D. Healy	08/27/2019 22:47	Justin Cutchin	2109502
	08/07/2019	08/26/2019 15:30	Elliott D. Healy	08/30/2019 15:29	Robert K Palmer	2109502
EPA 300.0 Rev. 2.1	08/07/2019			08/15/2019 19:34	Jhamieka S. Greenwood	2109496
EPA 350.1 Rev. 2.0	08/07/2019			08/15/2019 10:52	Ping Hua	2109497
EPA 351.2 Rev. 2.0	08/07/2019	08/14/2019 18:11	Sima Feizi	08/16/2019 18:40	Julia Storbeck	2109497
EPA 353.2 Rev. 2.0	08/07/2019			08/13/2019 12:12	Beverly Y. Sanders	2109497
EPA 365.1 Rev. 2.0	08/07/2019	08/09/2019 13:46	Vijayalakshmi Reddy	08/13/2019 14:03	Lipi Saha	2109497
EPA 365.1 Rev. 2.0 dissolved	08/07/2019			08/07/2019 17:14	Jhamieka S. Greenwood	2109498
EPA 8270E	08/07/2019	08/09/2019 09:00	Julie Wi	08/13/2019 15:17	Vandana T. Nagar	2109503
EPA 8321B	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/08/2019 23:21	Rebecca Ware	2109501
	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/09/2019 21:41	Rebecca Ware	2109501
	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/19/2019 20:39	Rebecca Ware	2109501
	08/07/2019	08/09/2019 12:00	Fe-Val Siddell	08/14/2019 00:23	Juyoung Kim	2109501
SM 2120 B	08/07/2019			08/08/2019 16:27	Madeline Funaro	2109496
SM 2320 B-97	08/07/2019			08/15/2019 06:57	Dale L. Simmons	2109496
SM 2540 C-97	08/07/2019			08/12/2019 16:08	Yijie Li	2109496
SM 2540 D-97	08/07/2019			08/12/2019 16:08	Yijie Li	2109496
SM 4500 F-C-97	08/07/2019			08/15/2019 06:57	Dale L. Simmons	2109496
SM 5310 B-00	08/07/2019			08/09/2019 15:19	Madeline Funaro	2109497