

Chemical Analysis Report

WAS-SECT-2019-03-26-01

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

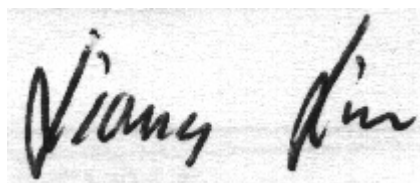
Event Description: **Group 2 SCIs**
Request ID: **RQ-2018-10-08-27**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 16-APR-2019 11:28

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Willson Mill Creek

Collection Date/Time: 03/26/2019 09:29

Field ID: G2WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072574	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	7.1		mg Cl/L	P361501	
		Sulfate	0.98		mg SO4/L	P361504	
	SM 2120 B	Color (true)	53		PCU	P361080	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	49		mg/L	P361740	
	SM 2540 D-97	TSS	3	I	mg/L	P361786	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P361655	
2072575	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P361391	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P361281	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P361288	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P361268	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P361174	
2072576	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P361090	
2072580	EPA 8321B	2,4-D	0.0020	U	ug/L	P361100	
		Acesulfame K**	0.10	U	ug/L	P361130	
		AMPA**	0.10	U	ug/L	P361130	
		Sucralose**	0.081		ug/L	P361130	
		Acetaminophen**	0.0080	U	ug/L	P361100	
		Endothall**	0.25	U	ug/L	P361130	
		Glufosinate**	0.10	U	ug/L	P361130	
		Bentazon	0.0037		ug/L	P361100	
		Glyphosate**	0.10	U	ug/L	P361130	
		Carbamazepine**	8.0E-04	U	ug/L	P361100	
		Diuron	0.0020	U	ug/L	P361100	
		Fenuron	0.016	U	ug/L	P361100	
		Fluridone**	8.0E-04	U	ug/L	P361100	
		Imazapyr**	0.0040	U	ug/L	P361100	
		Hydrocodone**	0.0020	U	ug/L	P361100	
		Ibuprofen**	0.020	U	ug/L	P361100	
		Imidacloprid	0.0060	I	ug/L	P361100	
		Linuron	0.0040	U	ug/L	P361100	
		MCPP	0.0020	U	ug/L	P361100	
		Naproxen**	0.0080	U	ug/L	P361100	
		Primidone**	0.0040	U	ug/L	P361100	
		Pyraclostrobin**	0.0020	U	ug/L	P361100	
		Triclopyr**	0.0040	U	ug/L	P361100	MS, RPD
2072581	EPA 200.7 Rev. 4.4	Barium	51.5		ug/L	P361160	
		Calcium	5.88		mg/L	P361160	
		Iron	610		ug/L	P361160	
		Magnesium	3.10		mg/L	P361160	
		Potassium	2.0		mg/L	P361160	
		Sodium	2.1		mg/L	P361160	

Field ID: G2WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072581	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P361160	
		Aluminum	149		ug/L	P361160	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P361160	
		Arsenic	0.38		ug/L	P361160	
		Boron**	14.4		ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.63	I	ug/L	P361160	
		Copper	0.54	I	ug/L	P361160	
		Lead	0.24	I	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	
2072582	EPA 8270D	Acetochlor	0.24	U	ng/L	P360892	
		Alachlor	34		ng/L	P360892	
		Ametryn	0.58	U	ng/L	P360892	
		Atrazine	0.41	I	ng/L	P360892	
		Atrazine Desethyl	1.4	UJ	ng/L	P360892	RPD
		Azinphos Methyl	4.8	U	ng/L	P360892	
		Bromacil	0.48	U	ng/L	P360892	
		Butylate	0.39	U	ng/L	P360892	
		Chlorpyrifos Ethyl	0.24	UJ	ng/L	P360892	MS, RPD
		Chlorpyrifos Methyl	0.097	U	ng/L	P360892	
		Cyanazine	3.1	U	ng/L	P360892	
		Demeton	6.8	UJ	ng/L	P360892	MS, RPD
		Diazinon	0.12	U	ng/L	P360892	
		Dimethenamid**	0.097	UJ	ng/L	P360892	MS, RPD
		Disulfoton	0.48	UJ	ng/L	P360892	MS, RPD
		Dithiopyr**	0.097	U	ng/L	P360892	
		EPTC	1.2	UJ	ng/L	P360892	RPD
		Ethion	0.14	U	ng/L	P360892	
		Ethoprop	0.097	UJ	ng/L	P360892	MS, RPD
		Fenamiphos	0.48	UJ	ng/L	P360892	RPD
		Fipronil	0.24	U	ng/L	P360892	
		Fipronil Desulfinyl**	0.12	U	ng/L	P360892	
		Fipronil Sulfide	0.14	U	ng/L	P360892	
		Fipronil Sulfone	0.14	U	ng/L	P360892	
		Fonofos	0.19	U	ng/L	P360892	
		Hexazinone	0.48	U	ng/L	P360892	
		Malathion	0.34	U	ng/L	P360892	
		Metalaxyl	0.29	U	ng/L	P360892	
		Metolachlor	24		ng/L	P360892	
		Metribuzin	4.5	J	ng/L	P360892	RPD
		Mevinphos	0.48	UJ	ng/L	P360892	MS, RPD
		Molinate	0.29	UJ	ng/L	P360892	RPD

Field ID: G2WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072582	EPA 8270D	Norflurazon	0.48	U	ng/L	P360892	
		Oxadiazon**	0.097	U	ng/L	P360892	
		Parathion Ethyl	0.24	U	ng/L	P360892	
		Parathion Methyl	0.53	U	ng/L	P360892	
		Pendimethalin	0.97	U	ng/L	P360892	
		Phorate	0.24	UJ	ng/L	P360892	MS, RPD
		Prodiamine**	0.17	U	ng/L	P360892	
		Prometon	0.87	U	ng/L	P360892	
		Prometryn	0.19	U	ng/L	P360892	
		Simazine	0.48	U	ng/L	P360892	
		Tebuconazole**	0.57	IJ	ng/L	P360892	LCS, MS, RPD
		Terbufos	0.097	U	ng/L	P360892	
		Terbuthylazine	0.41	U	ng/L	P360892	

Ref. Method and Comment:

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

EPA 8270D: MS accuracies for alachlor and metolachlor not assessed due to high content of these parameters in the sample spiked. 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: P361085

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P361160

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: P361160

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: P361501

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361504

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P361391

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: P361281

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361288

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

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

Reference Method: EPA 8270D
Batch ID: P360892

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 8270D

Batch ID: P360892

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: P361100

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: P361130

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: P361080

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361651

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

Reference Method: SM 2540 C-97
Batch ID: P361740

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361786

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361174

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: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	95.1		P	85 - 115
Calcium	96.5		P	85 - 115
Iron	99.1		P	85 - 115
Magnesium	97.1		P	85 - 115
Potassium	100		P	85 - 115
Sodium	95.4		P	85 - 115
Zinc	95.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	100		P	85 - 115
Boron	106		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	99.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	102		P	85 - 115
Selenium	98.1		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361501

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361504

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P361391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P361281

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P361288

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P361268

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P361090

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

Reference Method: EPA 8270D

Batch ID: P360892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	96.5	116	P/P	71 - 121
Alachlor	96.7	109	P/P	72 - 119
Ametryn	82.8	91.0	P/P	47 - 144
Atrazine	98.8	105	P/P	75 - 123
Atrazine Desethyl	109	97.1	P/P	45 - 133
Azinphos Methyl	119	116	P/P	66 - 165
Bromacil	73.5	89.5	P/P	43 - 123
Butylate	59.4	60.9	P/P	27 - 83.0
Chlorpyrifos Ethyl	91.2	92.9	P/P	70 - 117
Chlorpyrifos Methyl	113	97.9	P/P	71 - 120
Cyanazine	126	108	P/P	34 - 264
Demeton	80.4	72.8	P/P	41 - 122
Diazinon	101	108	P/P	70 - 127
Dimethenamid	96.9	117	P/P	60 - 130
Disulfoton	94.4	80.0	P/P	56 - 127
Dithiopyr	95.3	113	P/P	60 - 130
EPTC	59.8	69.1	P/P	24 - 84.0
Ethion	79.5	88.4	P/P	53 - 132
Ethoprop	88.7	88.5	P/P	57 - 117
Fenamiphos	85.5	90.8	P/P	55 - 136
Fipronil	100	116	P/P	64 - 126
Fipronil Desulfinyl	90.6	105	P/P	60 - 130
Fipronil Sulfide	90.6	94.8	P/P	57 - 120
Fipronil Sulfone	78.8	90.7	P/P	52 - 115
Fonofos	86.6	78.7	P/P	61 - 121
Hexazinone	92.7	110	P/P	62 - 131
Malathion	105	125	P/P	67 - 126
Metalaxyl	96.9	106	P/P	54 - 128
Metolachlor	87.7	107	P/P	71 - 118
Metribuzin	173	112	P/P	42 - 221
Mevinphos	91.6	100	P/P	45 - 114
Molinate	70.0	72.8	P/P	33 - 91.0
Norflurazon	102	119	P/P	60 - 123
Oxadiazon	92.4	101	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P360892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	85.1	89.7	P/P	73 - 111
Parathion Methyl	107	99.7	P/P	74 - 126
Pendimethalin	85.3	84.2	P/P	63 - 131
Phorate	87.2	68.9	P/P	54 - 115
Prodiamine	67.6	81.6	P/P	60 - 130
Prometon	88.8	108	P/P	61 - 120
Prometryn	93.4	102	P/P	62 - 126
Simazine	110	101	P/P	75 - 126
Tebuconazole	77.2	113	P/F	30 - 100
Terbufos	89.1	79.1	P/P	65 - 116
Terbuthylazine	91.7	91.3	P/P	73 - 117

Reference Method: EPA 8321B

Batch ID: P361100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.8		P	40 - 150
Acetaminophen	81.0		P	30 - 150
Bentazon	104		P	30 - 150
Carbamazepine	80.8		P	40 - 150
Diuron	71.2		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	124		P	40 - 150
Hydrocodone	86.0		P	40 - 150
Ibuprofen	63.4		P	40 - 150
Imazapyr	79.3		P	40 - 150
Imidacloprid	80.8		P	40 - 150
Linuron	68.1		P	40 - 150
MCPP	69.0		P	40 - 150
Naproxen	64.0		P	40 - 150
Primidone	82.0		P	40 - 150
Pyraclostrobin	64.9		P	40 - 150
Triclopyr	50.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P361130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	99.1		P	40 - 150
Endothall	114		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	110		P	40 - 140
Sucralose	88.9		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P361080

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P361651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Barium	92.1		P	80 - 120
2072482	Calcium	96.5		P	80 - 120
2072482	Iron	100		P	80 - 120
2072482	Magnesium	96.0		P	80 - 120
2072482	Potassium	94.2		P	80 - 120
2072482	Sodium	95.8		P	80 - 120
2072482	Zinc	94.4		P	80 - 120
2072801	Barium	94.3	93.8	P/P	80 - 120
2072801	Calcium	96.2		P	80 - 120
2072801	Iron	99.4	98.4	P/P	80 - 120
2072801	Magnesium	95.9		P	80 - 120
2072801	Potassium	97.3	96.8	P/P	80 - 120
2072801	Sodium	97.1		P	80 - 120
2072801	Zinc	94.0	94.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Aluminum	95.9		P	80 - 120
2072482	Antimony	97.9		P	80 - 120
2072482	Arsenic	100		P	80 - 120
2072482	Boron	103		P	80 - 120
2072482	Cadmium	103		P	80 - 120
2072482	Chromium	95.0		P	80 - 120
2072482	Copper	97.6		P	80 - 120
2072482	Lead	100		P	80 - 120
2072482	Nickel	98.9		P	80 - 120
2072482	Selenium	96.9		P	80 - 120
2072482	Silver	101		P	80 - 120
2072482	Thallium	102		P	80 - 120
2072801	Aluminum	96.3	96.9	P/P	80 - 120
2072801	Antimony	97.8	97.3	P/P	80 - 120
2072801	Arsenic	101	99.8	P/P	80 - 120
2072801	Boron	106	105	P/P	80 - 120
2072801	Cadmium	103	104	P/P	80 - 120
2072801	Chromium	96.8	96.3	P/P	80 - 120
2072801	Copper	98.2	97.2	P/P	80 - 120
2072801	Lead	98.7	99.8	P/P	80 - 120
2072801	Nickel	100	99.0	P/P	80 - 120
2072801	Selenium	97.8	97.3	P/P	80 - 120
2072801	Silver	101	102	P/P	80 - 120
2072801	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072574	Chloride	99.1		P	90 - 110
2072792	Chloride	98.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072574	Sulfate	101		P	90 - 110
2072792	Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072575	Ammonia-N	99.7	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072711	Kjeldahl Nitrogen	93.7	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072433	NO2NO3-N	98.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072493	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072505	O-Phosphate-P	97.8	99.3	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072582	Acetochlor	108	102	P/P	63 - 129
2072582	Ametryn	105	103	P/P	40 - 164
2072582	Atrazine	96.4	114	P/P	66 - 135
2072582	Atrazine Desethyl	101	138	P/P	14 - 157
2072582	Azinphos Methyl	121	138	P/P	49 - 180
2072582	Bromacil	94.4	88.5	P/P	48 - 130
2072582	Butylate	38.9	34.6	P/P	10 - 94.0
2072582	Chlorpyrifos Ethyl	93.2	128	P/F	58 - 123
2072582	Chlorpyrifos Methyl	103	111	P/P	58 - 125
2072582	Cyanazine	97.9	131	P/P	24 - 253
2072582	Demeton	73.1	150	P/F	25 - 149
2072582	Diazinon	95.8	90.6	P/P	59 - 144
2072582	Dimethenamid	103	55.1	P/F	60 - 130
2072582	Disulfoton	90.2	167	P/F	54 - 132
2072582	Dithiopyr	103	99.5	P/P	60 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P360892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072582	EPTC	40.6	56.3	P/P	10 - 92.0
2072582	Ethion	94.3	117	P/P	30 - 148
2072582	Ethoprop	88.0	286	P/F	50 - 130
2072582	Fenamiphos	91.4	132	P/P	49 - 142
2072582	Fipronil	111	111	P/P	46 - 140
2072582	Fipronil Desulfinyl	98.4	97.1	P/P	60 - 130
2072582	Fipronil Sulfide	103	110	P/P	31 - 136
2072582	Fipronil Sulfone	98.4	100	P/P	16 - 136
2072582	Fonofos	83.1	101	P/P	55 - 129
2072582	Hexazinone	101	101	P/P	56 - 141
2072582	Malathion	130	108	P/P	56 - 135
2072582	Metalaxyl	101	89.8	P/P	54 - 135
2072582	Metribuzin	134	182	P/P	45 - 254
2072582	Mevinphos	102	220	P/F	33 - 131
2072582	Molinate	57.6	87.7	P/P	14 - 98.0
2072582	Norflurazon	109	106	P/P	34 - 136
2072582	Oxadiazon	89.9	107	P/P	60 - 130
2072582	Parathion Ethyl	90.7	88.3	P/P	66 - 118
2072582	Parathion Methyl	109	120	P/P	64 - 136
2072582	Pendimethalin	88.6	85.3	P/P	59 - 144
2072582	Phorate	92.0	7090	P/F	42 - 130
2072582	Prodiamine	110	108	P/P	60 - 130
2072582	Prometon	94.9	93.5	P/P	59 - 134
2072582	Prometryn	92.8	107	P/P	54 - 135
2072582	Simazine	109	83.8	P/P	53 - 156
2072582	Tebuconazole	110	82.9	F/P	30 - 100
2072582	Terbufos	85.7	103	P/P	57 - 131
2072582	Terbutylazine	91.8	93.9	P/P	68 - 125

Reference Method: EPA 8321B

Batch ID: P361100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073228	2,4-D	63.7	71.8	P/P	40 - 150
2073228	Acetaminophen	73.5	84.4	P/P	30 - 150
2073228	Bentazon	87.4	91.5	P/P	30 - 150
2073228	Carbamazepine	81.3	84.0	P/P	40 - 150
2073228	Diuron	64.1	68.4	P/P	40 - 150
2073228	Fenuron	108	117	P/P	40 - 150
2073228	Fluridone	144	148	P/P	40 - 150
2073228	Hydrocodone	83.6	87.2	P/P	40 - 150
2073228	Ibuprofen	84.6	83.3	P/P	40 - 150
2073228	Imazapyr	81.8	90.0	P/P	40 - 150
2073228	Imidacloprid	148	139	P/P	40 - 150
2073228	Linuron	71.7	63.6	P/P	40 - 150
2073228	MCP	87.7	99.0	P/P	40 - 150
2073228	Naproxen	61.2	67.4	P/P	40 - 150
2073228	Primidone	62.5	78.4	P/P	40 - 150
2073228	Pyraclostrobin	75.2	74.1	P/P	40 - 150
2073228	Triclopyr	36.3	54.6	F/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P361130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072421	Acesulfame K	105	113	P/P	40 - 150
2072421	AMPA	103	96.2	P/P	40 - 150
2072421	Endothall	82.8	78.6	P/P	40 - 150
2072421	Glufosinate	99.9	100	P/P	40 - 150
2072421	Glyphosate	93.8	103	P/P	40 - 140
2072421	Sucralose	57.2	73.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072446	Fluoride	99.5	99.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072448	Organic Carbon	96.7	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P361085

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072349	Turbidity	2.53	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P361160

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Barium	0.562	Spike	P	0 - 20
2072801	Calcium	1.10	Spike	P	0 - 20
2072801	Iron	1.04	Spike	P	0 - 20
2072801	Magnesium	0.190	Spike	P	0 - 20
2072801	Potassium	0.491	Spike	P	0 - 20
2072801	Sodium	0.142	Spike	P	0 - 20
2072801	Zinc	0.0344	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P361160

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Aluminum	0.667	Spike	P	0 - 20
2072801	Antimony	0.469	Spike	P	0 - 20
2072801	Arsenic	1.47	Spike	P	0 - 20
2072801	Boron	0.786	Spike	P	0 - 20
2072801	Cadmium	0.285	Spike	P	0 - 20
2072801	Chromium	0.514	Spike	P	0 - 20
2072801	Copper	0.963	Spike	P	0 - 20
2072801	Lead	1.04	Spike	P	0 - 20
2072801	Nickel	0.959	Spike	P	0 - 20
2072801	Selenium	0.404	Spike	P	0 - 20
2072801	Silver	1.09	Spike	P	0 - 20
2072801	Thallium	1.06	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361501

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Chloride	0.638	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P361504

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Sulfate	0.389	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072575	Ammonia-N	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072711	Kjeldahl Nitrogen	0.695	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072433	NO2NO3-N	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072493	Total-P	0.0729	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072505	O-Phosphate-P	1.42	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P360892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072582	Acetochlor	6.42	Spike	P	0 - 30
2072582	Alachlor	9.62	Spike	P	0 - 30
2072582	Ametryn	2.26	Spike	P	0 - 30
2072582	Atrazine	15.0	Spike	P	0 - 30
2072582	Atrazine Desethyl	30.8	Spike	F	0 - 30
2072582	Azinphos Methyl	13.2	Spike	P	0 - 30
2072582	Bromacil	6.35	Spike	P	0 - 30
2072582	Butylate	11.7	Spike	P	0 - 30
2072582	Chlorpyrifos Ethyl	31.2	Spike	F	0 - 30
2072582	Chlorpyrifos Methyl	7.57	Spike	P	0 - 30
2072582	Cyanazine	29.3	Spike	P	0 - 30
2072582	Demeton	69.2	Spike	F	0 - 30
2072582	Diazinon	5.60	Spike	P	0 - 30
2072582	Dimethenamid	60.4	Spike	F	0 - 30
2072582	Disulfoton	59.4	Spike	F	0 - 30
2072582	Dithiopyr	3.30	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P360892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072582	EPTC	32.5	Spike	F	0 - 30
2072582	Ethion	21.4	Spike	P	0 - 30
2072582	Ethoprop	106	Spike	F	0 - 30
2072582	Fenamiphos	36.5	Spike	F	0 - 30
2072582	Fipronil	0.0384	Spike	P	0 - 30
2072582	Fipronil Desulfinyl	1.27	Spike	P	0 - 30
2072582	Fipronil Sulfide	6.63	Spike	P	0 - 30
2072582	Fipronil Sulfone	1.78	Spike	P	0 - 30
2072582	Fonofos	19.6	Spike	P	0 - 30
2072582	Hexazinone	0.344	Spike	P	0 - 30
2072582	Malathion	18.9	Spike	P	0 - 30
2072582	Metaxyl	11.5	Spike	P	0 - 30
2072582	Metolachlor	13.3	Spike	P	0 - 30
2072582	Metribuzin	22.0	Spike	P	0 - 30
2072582	Mevinphos	73.5	Spike	F	0 - 30
2072582	Molinate	41.5	Spike	F	0 - 30
2072582	Norflurazon	3.28	Spike	P	0 - 30
2072582	Oxadiazon	17.5	Spike	P	0 - 30
2072582	Parathion Ethyl	2.63	Spike	P	0 - 30
2072582	Parathion Methyl	9.89	Spike	P	0 - 30
2072582	Pendimethalin	3.71	Spike	P	0 - 30
2072582	Phorate	195	Spike	F	0 - 30
2072582	Prodiamine	1.57	Spike	P	0 - 30
2072582	Prometon	1.49	Spike	P	0 - 30
2072582	Prometryn	14.4	Spike	P	0 - 30
2072582	Simazine	25.7	Spike	P	0 - 30
2072582	Tebuconazole	26.4	Spike	P	0 - 30
2072582	Terbufos	18.6	Spike	P	0 - 30
2072582	Terbutylazine	2.24	Spike	P	0 - 30
LFB	Acetochlor	18.2	LCS	P	0 - 30
LFB	Alachlor	12.1	LCS	P	0 - 30
LFB	Ametryn	9.43	LCS	P	0 - 30
LFB	Atrazine	5.81	LCS	P	0 - 30
LFB	Atrazine Desethyl	11.6	LCS	P	0 - 30
LFB	Azinphos Methyl	2.14	LCS	P	0 - 30
LFB	Bromacil	19.6	LCS	P	0 - 30
LFB	Butylate	2.55	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.91	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	13.9	LCS	P	0 - 30
LFB	Cyanazine	15.2	LCS	P	0 - 30
LFB	Demeton	9.89	LCS	P	0 - 30
LFB	Diazinon	6.70	LCS	P	0 - 30
LFB	Dimethenamid	18.6	LCS	P	0 - 30
LFB	Disulfoton	16.5	LCS	P	0 - 30
LFB	Dithiopyr	17.2	LCS	P	0 - 30
LFB	EPTC	14.4	LCS	P	0 - 30
LFB	Ethion	10.6	LCS	P	0 - 30
LFB	Ethoprop	0.123	LCS	P	0 - 30
LFB	Fenamiphos	5.97	LCS	P	0 - 30
LFB	Fipronil	14.6	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	14.5	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P360892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	4.57	LCS	P	0 - 30
LFB	Fipronil Sulfone	14.0	LCS	P	0 - 30
LFB	Fonofos	9.59	LCS	P	0 - 30
LFB	Hexazinone	17.5	LCS	P	0 - 30
LFB	Malathion	17.2	LCS	P	0 - 30
LFB	Metalaxyl	8.85	LCS	P	0 - 30
LFB	Metolachlor	20.1	LCS	P	0 - 30
LFB	Metribuzin	42.8	LCS	F	0 - 30
LFB	Mevinphos	9.23	LCS	P	0 - 30
LFB	Molinate	3.90	LCS	P	0 - 30
LFB	Norflurazon	15.4	LCS	P	0 - 30
LFB	Oxadiazon	8.56	LCS	P	0 - 30
LFB	Parathion Ethyl	5.23	LCS	P	0 - 30
LFB	Parathion Methyl	6.65	LCS	P	0 - 30
LFB	Pendimethalin	1.26	LCS	P	0 - 30
LFB	Phorate	23.5	LCS	P	0 - 30
LFB	Prodiamine	18.7	LCS	P	0 - 30
LFB	Prometon	19.4	LCS	P	0 - 30
LFB	Prometryn	8.67	LCS	P	0 - 30
LFB	Simazine	8.54	LCS	P	0 - 30
LFB	Tebuconazole	37.3	LCS	F	0 - 30
LFB	Terbufos	11.9	LCS	P	0 - 30
LFB	Terbuthylazine	0.451	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P361100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073228	2,4-D	11.9	Spike	P	0 - 30
2073228	Acetaminophen	13.8	Spike	P	0 - 30
2073228	Bentazon	4.54	Spike	P	0 - 30
2073228	Carbamazepine	3.26	Spike	P	0 - 30
2073228	Diuron	6.50	Spike	P	0 - 30
2073228	Fenuron	7.29	Spike	P	0 - 30
2073228	Fluridone	2.43	Spike	P	0 - 30
2073228	Hydrocodone	4.22	Spike	P	0 - 30
2073228	Ibuprofen	1.47	Spike	P	0 - 30
2073228	Imazapyr	9.54	Spike	P	0 - 30
2073228	Imidacloprid	6.33	Spike	P	0 - 30
2073228	Linuron	12.1	Spike	P	0 - 30
2073228	MCP	12.0	Spike	P	0 - 30
2073228	Naproxen	9.59	Spike	P	0 - 30
2073228	Primidone	22.5	Spike	P	0 - 30
2073228	Pyraclostrobin	1.43	Spike	P	0 - 30
2073228	Triclopyr	40.3	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P361130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072421	Acesulfame K	6.91	Spike	P	0 - 30
2072421	AMPA	6.83	Spike	P	0 - 30
2072421	Endothall	5.17	Spike	P	0 - 30
2072421	Glufosinate	0.383	Spike	P	0 - 30
2072421	Glyphosate	7.87	Spike	P	0 - 30
2072421	Sucralose	19.9	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P361080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072499	Color (true)	2.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P361651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Total Alkalinity	0.791	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97

Batch ID: P361740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072833	TDS	5.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P361655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00

Batch ID: P361174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072448	Organic Carbon	0.275	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: 2072580
Field Sample ID: G2WA0020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.4	P	30 - 160
EPA 8321B	Diuron-d6	92.2	P	30 - 160
EPA 8321B	Endothall-d6	52.4	P	30 - 160
EPA 8321B	Endothall-d6	52.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.2	P	30 - 160
EPA 8321B	Primidone-d5	96.4	P	30 - 160
EPA 8321B	Sucralose-d6	69.0	P	30 - 160
EPA 8321B	Sucralose-d6	69.0	P	30 - 160

Lab Sample ID: 2072582
Field Sample ID: G2WA0020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	117	P	68 - 130
EPA 8270D	Terbufos-d10	92.1	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A90241
Included Lab Sample IDs: 2072574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90242
Included Lab Sample IDs: 2072574

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90243
Included Lab Sample IDs: 2072576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.4	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90286
Included Lab Sample IDs: 2072575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90307
Included Lab Sample IDs: 2072581

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.0	97.2	P/P	90 - 110
Calcium	98.1	97.9	P/P	90 - 110
Iron	97.5	97.1	P/P	90 - 110
Magnesium	98.5	97.9	P/P	90 - 110
Potassium	96.2	96.1	P/P	90 - 110
Sodium	97.8	99.4	P/P	90 - 110
Zinc	96.8	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90326
Included Lab Sample IDs: 2072575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90333
Included Lab Sample IDs: 2072581

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.1	98.4	P/P	90 - 110
Antimony	96.8	95.7	P/P	90 - 110
Arsenic	97.1	98.5	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90333

Included Lab Sample IDs: 2072581

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	102	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	100	103	P/P	90 - 110
Copper	98.2	102	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Nickel	98.4	102	P/P	90 - 110
Selenium	97.4	98.7	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	93.7	95.1	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A90343

Included Lab Sample IDs: 2072582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	104		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	86.6		P	80 - 120
Atrazine	98.5		P	80 - 120
Atrazine Desethyl	94.9		P	80 - 120
Azinphos Methyl	90.2		P	80 - 120
Bromacil	106		P	80 - 120
Butylate	99.6		P	80 - 120
Chlorpyrifos Ethyl	98.2		P	80 - 120
Chlorpyrifos Methyl	102		P	80 - 120
Cyanazine	95.0		P	80 - 120
Demeton	91.5		P	80 - 120
Diazinon	97.8		P	80 - 120
Dimethenamid	105		P	80 - 120
Disulfoton	92.7		P	80 - 120
Dithiopyr	101		P	80 - 120
EPTC	101		P	80 - 120
Ethion	92.6		P	80 - 120
Ethoprop	95.4		P	80 - 120
Fenamiphos	92.8		P	80 - 120
Fipronil	99.8		P	80 - 120
Fipronil Desulfinyl	107		P	80 - 120
Fipronil Sulfide	93.6		P	80 - 120
Fipronil Sulfone	100		P	80 - 120
Fonofos	91.4		P	80 - 120
Hexazinone	96.0		P	80 - 120
Malathion	98.1		P	80 - 120
Metalaxyl	102		P	80 - 120
Metolachlor	108		P	80 - 120
Metribuzin	89.1		P	80 - 120
Mevinphos	99.5		P	80 - 120
Molinate	101		P	80 - 120
Norflurazon	113		P	80 - 120
Oxadiazon	108		P	80 - 120
Parathion Ethyl	97.2		P	80 - 120
Parathion Methyl	87.9		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A90343
Included Lab Sample IDs: 2072582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pendimethalin	96.6		P	80 - 120
Phorate	96.4		P	80 - 120
Prodiamine	95.2		P	80 - 120
Prometon	114		P	80 - 120
Prometryn	110		P	80 - 120
Simazine	88.5		P	80 - 120
Tebuconazole	106		P	80 - 120
Terbufos	92.3		P	80 - 120
Terbuthylazine	100		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90350
Included Lab Sample IDs: 2072575

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90356
Included Lab Sample IDs: 2072575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90367
Included Lab Sample IDs: 2072575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.8	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90372
Included Lab Sample IDs: 2072580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	116	P/P	60 - 160
Glufosinate	116	117	P/P	60 - 160
Glyphosate	114	124	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A90375
Included Lab Sample IDs: 2072580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	78.6	67.2	P/P	60 - 160
Endothall	103	109	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90412

Included Lab Sample IDs: 2072574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	101	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90431

Included Lab Sample IDs: 2072580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.0	85.0	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A90475

Included Lab Sample IDs: 2072574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90475

Included Lab Sample IDs: 2072574

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

Reference Method: EPA 8321B

Run ID: A90623

Included Lab Sample IDs: 2072580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.8	99.7	P/P	50 - 150
Acetaminophen	106	121	P/P	60 - 160
Bentazon	107	107	P/P	50 - 160
Carbamazepine	114	115	P/P	60 - 150
Diuron	115	119	P/P	60 - 150
Fenuron	109	113	P/P	60 - 150
Fluridone	135	65.9	P/P	60 - 160
Hydrocodone	104	109	P/P	60 - 150
Ibuprofen	116	85.8	P/P	50 - 160
Imazapyr	106	134	P/P	50 - 150
Imidacloprid	102	105	P/P	60 - 150
Linuron	144	109	P/P	60 - 150
MCP	106	98.0	P/P	50 - 150
Naproxen	124	118	P/P	50 - 160
Primidone	100	132	P/P	60 - 150
Pyraclostrobin	109	106	P/P	60 - 150
Triclopyr	96.4	108	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							2.53	
EPA 200.7 Rev. 4.4	Barium	95.1		92.1	94.3	93.8			0.562
	Calcium	96.5		96.5	96.2				1.10
	Iron	99.1		100	99.4	98.4			1.04
	Magnesium	97.1		96.0	95.9				0.190
	Potassium	100		94.2	97.3	96.8			0.491
	Sodium	95.4		95.8	97.1				0.142
	Zinc	95.0		94.4	94.0	94.0			0.0344
EPA 200.8 Rev. 5.4	Aluminum	98.8		95.9	96.3	96.9			0.667
	Antimony	97.7		97.9	97.8	97.3			0.469
	Arsenic	100		100	101	99.8			1.47
	Boron	106		103	106	105			0.786
	Cadmium	103		103	103	104			0.285
	Chromium	97.5		95.0	96.8	96.3			0.514
	Copper	99.9		97.6	98.2	97.2			0.963
	Lead	100		100	98.7	99.8			1.04
	Nickel	102		98.9	100	99.0			0.959
	Selenium	98.1		96.9	97.8	97.3			0.404
	Silver	102		101	101	102			1.09
	Thallium	102		102	101	102			1.06
EPA 300.0 Rev. 2.1	Chloride	97.6		98.2	99.1			0.638	
	Sulfate	99.5		97.3	101			0.389	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4		99.7	102				1.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.8		93.7	94.6				0.695
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		98.5	97.0				1.53
EPA 365.1 Rev. 2.0	Total-P	96.6		101	101				0.0729
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		97.8	99.3				1.42
EPA 8270D	Acetochlor	96.5	116	102	108		18.2		6.42
	Alachlor	96.7	109				12.1		9.62
	Ametryn	82.8	91.0	105	103		9.43		2.26
	Atrazine	98.8	105	96.4	114		5.81		15.0
	Atrazine Desethyl	109	97.1	101	138		11.6		30.8
	Azinphos Methyl	119	116	121	138		2.14		13.2
	Bromacil	73.5	89.5	94.4	88.5		19.6		6.35
	Butylate	59.4	60.9	38.9	34.6		2.55		11.7
	Chlorpyrifos Ethyl	91.2	92.9	93.2	128		1.91		31.2
	Chlorpyrifos Methyl	113	97.9	111	103		13.9		7.57
	Cyanazine	126	108	131	97.9		15.2		29.3
	Demeton	80.4	72.8	150	73.1		9.89		69.2
	Diazinon	101	108	90.6	95.8		6.70		5.60
	Dimethenamid	96.9	117	55.1	103		18.6		60.4
	Disulfoton	94.4	80.0	167	90.2		16.5		59.4
	Dithiopyr	95.3	113	99.5	103		17.2		3.30
	EPTC	59.8	69.1	56.3	40.6		14.4		32.5
	Ethion	79.5	88.4	117	94.3		10.6		21.4
	Ethoprop	88.7	88.5	286	88.0		0.123		106
	Fenamiphos	85.5	90.8	132	91.4		5.97		36.5
	Fipronil	100	116	111	111		14.6		0.0384
	Fipronil Desulfinyl	90.6	105	97.1	98.4		14.5		1.27
	Fipronil Sulfide	90.6	94.8	110	103		4.57		6.63
	Fipronil Sulfone	78.8	90.7	100	98.4		14.0		1.78
	Fonofos	86.6	78.7	83.1	101		9.59		19.6
	Hexazinone	92.7	110	101	101		17.5		0.344
	Malathion	105	125	130	108		17.2		18.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	96.9	106	101	89.8	8.85	11.5
	Metolachlor	87.7	107			20.1	13.3
	Metribuzin	173	112	134	182	42.8	22.0
	Mevinphos	91.6	100	102	220	9.23	73.5
	Molinate	70.0	72.8	57.6	87.7	3.90	41.5
	Norflurazon	102	119	109	106	15.4	3.28
	Oxadiazon	92.4	101	89.9	107	8.56	17.5
	Parathion Ethyl	85.1	89.7	90.7	88.3	5.23	2.63
	Parathion Methyl	107	99.7	109	120	6.65	9.89
	Pendimethalin	85.3	84.2	88.6	85.3	1.26	3.71
	Phorate	87.2	68.9	92.0	7090	23.5	195
	Prodiamine	67.6	81.6	110	108	18.7	1.57
	Prometon	88.8	108	94.9	93.5	19.4	1.49
	Prometryn	93.4	102	92.8	107	8.67	14.4
	Simazine	110	101	109	83.8	8.54	25.7
	Tebuconazole	77.2	113	110	82.9	37.3	26.4
	Terbufos	89.1	79.1	85.7	103	11.9	18.6
	Terbuthylazine	91.7	91.3	91.8	93.9	0.451	2.24
EPA 8321B	2,4-D	64.8		63.7	71.8		11.9
	Acesulfame K	126		105	113		6.91
	Acetaminophen	81.0		73.5	84.4		13.8
	AMPA	99.1		103	96.2		6.83
	Bentazon	104		87.4	91.5		4.54
	Carbamazepine	80.8		81.3	84.0		3.26
	Diuron	71.2		64.1	68.4		6.50
	Endothall	114		82.8	78.6		5.17
	Fenuron	104		108	117		7.29
	Fluridone	124		144	148		2.43
	Glufosinate	109		99.9	100		0.383
	Glyphosate	110		93.8	103		7.87
	Hydrocodone	86.0		83.6	87.2		4.22
	Ibuprofen	63.4		84.6	83.3		1.47
	Imazapyr	79.3		81.8	90.0		9.54
	Imidacloprid	80.8		148	139		6.33
	Linuron	68.1		71.7	63.6		12.1
	MCPP	69.0		87.7	99.0		12.0
	Naproxen	64.0		61.2	67.4		9.59
	Primidone	82.0		62.5	78.4		22.5
SM 2120 B	Color (true)	100				2.43	
	Total Alkalinity	99.1				0.791	
SM 2540 C-97	TDS					5.58	
SM 4500 F-C-97	Fluoride	99.3		99.5	99.5		0.0
SM 5310 B-00	Organic Carbon	99.4		96.7	97.1		0.275

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2072574

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	2072581
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2072581
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2072574
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2072574
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2072575
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2072575
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2072575
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2072575
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2072576
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2072582
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2072580
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2072580
SM 2120 B / E31780	True Color measured at 450 nm	2072574
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2072574
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2072574
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2072574
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2072574
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2072575

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	03/26/2019			03/26/2019 16:32	Adrian Shelby	2072574
EPA 200.7 Rev. 4.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 15:40	Betina Topolski	2072581
EPA 200.8 Rev. 5.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/30/2019 01:26	Robert K Palmer	2072581
EPA 300.0 Rev. 2.1	03/26/2019			04/02/2019 16:17	Lipi Saha	2072574
EPA 350.1 Rev. 2.0	03/26/2019			04/01/2019 11:48	Ping Hua	2072575
EPA 351.2 Rev. 2.0	03/26/2019	03/29/2019 13:30	Jhamieka S. Greenwood	04/01/2019 12:52	Joseph Suarez	2072575
EPA 353.2 Rev. 2.0	03/26/2019			03/29/2019 13:31	Virginia P. Brown	2072575
EPA 365.1 Rev. 2.0	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:51	Rosalyn Ballman	2072575
EPA 365.1 Rev. 2.0 dissolved	03/26/2019			03/26/2019 16:22	Jhamieka S. Greenwood	2072576
EPA 8270D	03/26/2019	03/27/2019 08:00	Fe-Val Siddell	03/28/2019 15:02	Vandana T. Nagar	2072582
EPA 8321B	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/28/2019 16:26	Rebecca Ware	2072580
	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/29/2019 15:01	Rebecca Ware	2072580
	03/26/2019	03/28/2019 09:45	Rebecca Ware	04/01/2019 21:06	Rebecca Ware	2072580
	03/26/2019	03/29/2019 10:00	Hoor Shaik	04/10/2019 06:51	Juyoung Kim	2072580
SM 2120 B	03/26/2019			03/26/2019 16:28	Mariam Hanna	2072574
SM 2320 B-97	03/26/2019			04/04/2019 11:17	Dale L. Simmons	2072574
SM 2540 C-97	03/26/2019			03/29/2019 15:26	Yijie Li	2072574
SM 2540 D-97	03/26/2019			03/29/2019 15:26	Yijie Li	2072574
SM 4500 F-C-97	03/26/2019			04/04/2019 11:17	Dale L. Simmons	2072574
SM 5310 B-00	03/26/2019			03/28/2019 01:18	Julia Storbeck	2072575