

Chemical Analysis Report

WAS-SECT-2019-05-07-01

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

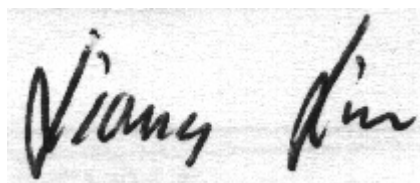
Event Description: **SCI 5**
Request ID: **RQ-2019-03-04-30**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-MAY-2019 15:04

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: Quincy Creek upstream of SR 267

Collection Date/Time: 05/07/2019 13:45

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084275	EPA 180.1 Rev. 2.0	Turbidity	8.1		NTU	P363547	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P363823	
		Sulfate	0.34	I	mg SO4/L	P363825	
		Color (true)	61	A	PCU	P363563	
	SM 2120 B	Total Alkalinity	17		mg CaCO3/L	P364170	
	SM 2540 C-97	TDS	35		mg/L	P363790	
	SM 2540 D-97	TSS	9	I	mg/L	P363696	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P364174	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P363906	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P363928	
2084276	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P363835	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P363720	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P363993	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.034		mg P/L	P363650	
	dissolved						
2084281	EPA 8321B	2,4-D	0.0020	U	ug/L	P363505	
		Acesulfame K**	0.10	U	ug/L	P363636	
		AMPA**	0.11	I	ug/L	P363636	
		Sucralose**	0.11		ug/L	P363636	
		Acetaminophen**	0.0080	U	ug/L	P363505	
		Endothall**	0.25	U	ug/L	P363636	
		Glufosinate**	0.10	U	ug/L	P363636	
		Bentazon	8.0E-04	U	ug/L	P363505	
		Glyphosate**	0.10	U	ug/L	P363636	
		Carbamazepine**	8.0E-04	U	ug/L	P363505	
		Diuron	0.0020	U	ug/L	P363505	
		Fenuron	0.016	U	ug/L	P363505	
		Fluridone**	8.0E-04	U	ug/L	P363505	
		Imazapyr**	0.0040	U	ug/L	P363505	
		Hydrocodone**	0.0020	U	ug/L	P363505	
		Ibuprofen**	0.020	U	ug/L	P363505	
		Imidacloprid	0.0036	I	ug/L	P363505	
		Linuron	0.0040	U	ug/L	P363505	
		MCPP	0.0020	U	ug/L	P363505	
		Naproxen**	0.0080	U	ug/L	P363505	
		Primidone**	0.0040	U	ug/L	P363505	
		Pyraclostrobin**	0.0020	U	ug/L	P363505	
		Triclopyr**	0.0040	U	ug/L	P363505	
2084282	EPA 200.7 Rev. 4.4	Barium	14.5		ug/L	P363686	
		Calcium	5.57		mg/L	P363686	
		Iron	1.69E+03		ug/L	P363686	
		Magnesium	1.86		mg/L	P363686	
		Potassium	0.30	U	mg/L	P363686	
		Sodium	3.3		mg/L	P363686	

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084282	EPA 200.7 Rev. 4.4	Zinc	23		ug/L	P363686	
	EPA 200.8 Rev. 5.4	Aluminum	205		ug/L	P363686	
		Antimony	0.050	U	ug/L	P363686	
		Arsenic	0.74		ug/L	P363686	
		Boron**	9.9		ug/L	P363686	
		Cadmium	0.020	U	ug/L	P363686	
		Chromium	0.47	I	ug/L	P363686	
		Copper	0.40	U	ug/L	P363686	
		Lead	0.24	I	ug/L	P363686	
		Nickel	0.63	I	ug/L	P363686	
		Selenium	0.20	U	ug/L	P363686	
		Silver	0.010	U	ug/L	P363686	
		Thallium	0.10	U	ug/L	P363686	
2084283	EPA 8270E	Acetochlor	0.25	U	ng/L	P363660	
		Alachlor	0.25	U	ng/L	P363660	
		Ametryn	0.60	U	ng/L	P363660	
		Atrazine	3.2		ng/L	P363660	
		Atrazine Desethyl	1.5	U	ng/L	P363660	
		Azinphos Methyl	5.0	U	ng/L	P363660	
		Bromacil	21		ng/L	P363660	
		Butylate	0.40	U	ng/L	P363660	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P363660	
		Chlorpyrifos Methyl	0.10	U	ng/L	P363660	
		Cyanazine	3.3	U	ng/L	P363660	
		Demeton	7.0	U	ng/L	P363660	
		Diazinon	0.13	U	ng/L	P363660	
		Dimethenamid**	0.42	VQ	ng/L	P364350	
		Disulfoton	0.50	U	ng/L	P363660	
		Dithiopyr**	0.10	U	ng/L	P363660	
		EPTC	1.3	U	ng/L	P363660	
		Ethion	0.15	U	ng/L	P363660	
		Ethoprop	0.10	U	ng/L	P363660	
		Fenamiphos	0.50	U	ng/L	P363660	
		Fipronil	0.25	U	ng/L	P363660	
		Fipronil Desulfinyl**	0.13	U	ng/L	P363660	
		Fipronil Sulfide	0.15	U	ng/L	P363660	
		Fipronil Sulfone	0.15	U	ng/L	P363660	
		Fonofos	0.20	U	ng/L	P363660	
		Hexazinone	0.50	U	ng/L	P363660	
		Malathion	0.35	U	ng/L	P363660	
		Metalaxyl	0.30	U	ng/L	P363660	
		Metolachlor	1.5	I	ng/L	P363660	
		Metribuzin	0.76	U	ng/L	P363660	
		Mevinphos	0.50	U	ng/L	P363660	
		Molinate	0.30	U	ng/L	P363660	

Field ID: G1WA0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084283	EPA 8270E	Norflurazon	0.50	U	ng/L	P363660	
		Oxadiazon**	0.10	U	ng/L	P363660	
		Parathion Ethyl	0.25	U	ng/L	P363660	
		Parathion Methyl	0.55	U	ng/L	P363660	
		Pendimethalin	1.0	U	ng/L	P363660	
		Phorate	0.25	U	ng/L	P363660	
		Prodiamine**	0.18	U	ng/L	P363660	
		Prometon	0.91	UJ	ng/L	P363660	LCS, MS, RPD
		Prometryn	0.20	U	ng/L	P363660	
		Simazine	1.5	I	ng/L	P363660	
		Tebuconazole**	0.50	UJ	ng/L	P363660	LCS, RPD
		Terbufos	0.10	U	ng/L	P363660	
		Terbuthylazine	0.43	U	ng/L	P363660	

Ref. Method and Comment:

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

EPA 8270E: Sample expired for preparation for dimethenamid due to re-extraction. Insufficient sample available to perform duplicate matrix spikes in the re-extraction. V - Due to the presence of dimethenamid in both the Method Blank and the sample. 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: P363547

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P363686

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: P363686

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: P363823

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P363825

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P363906

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: P363928

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363835

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363720

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363650

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

Reference Method: EPA 8270E
Batch ID: P363660

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
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
Metaxyl	0.30	U	ng/L
Metolachlor	0.50	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P363660

Component	Result	Code	Units
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 8270E

Batch ID: P364350

Component	Result	Code	Units
Dimethenamid	0.30	I	ng/L

Reference Method: EPA 8321B

Batch ID: P363505

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: P363636

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P363636

Component	Result	Code	Units
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P363563

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P364170

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

Reference Method: SM 2540 C-97
Batch ID: P363790

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363696

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363993

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: P363686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.5		P	85 - 115
Calcium	99.3		P	85 - 115
Iron	100		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	99.4		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P363686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.0		P	85 - 115
Antimony	98.2		P	85 - 115
Arsenic	102		P	85 - 115
Boron	97.5		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	99.3		P	85 - 115
Copper	99.6		P	85 - 115
Lead	100		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	101		P	85 - 115
Silver	98.4		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P363823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P363825

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P363906

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P363928

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P363835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P363720

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: P363650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P363660

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	103	111	P/P	71 - 121
Alachlor	96.2	112	P/P	72 - 119
Ametryn	102	112	P/P	47 - 144
Atrazine	105	114	P/P	75 - 123
Atrazine Desethyl	45.7	47.3	P/P	45 - 133
Azinphos Methyl	98.5	109	P/P	66 - 165
Bromacil	83.8	102	P/P	43 - 123
Butylate	78.6	82.0	P/P	27 - 83.0
Chlorpyrifos Ethyl	101	101	P/P	70 - 117
Chlorpyrifos Methyl	96.1	95.3	P/P	71 - 120
Cyanazine	60.9	50.9	P/P	34 - 264
Demeton	80.6	71.3	P/P	41 - 122
Diazinon	99.1	106	P/P	70 - 127
Disulfoton	86.2	77.7	P/P	56 - 127
Dithiopyr	103	110	P/P	67 - 125
EPTC	78.8	79.0	P/P	24 - 84.0
Ethion	111	113	P/P	53 - 132
Ethoprop	102	103	P/P	57 - 117
Fenamiphos	73.3	58.9	P/P	55 - 136
Fipronil	97.5	113	P/P	64 - 126
Fipronil Desulfinyl	94.5	107	P/P	47 - 114
Fipronil Sulfide	106	105	P/P	57 - 120
Fipronil Sulfone	97.3	105	P/P	52 - 115
Fonofos	91.1	91.9	P/P	61 - 121
Hexazinone	86.5	116	P/P	62 - 131
Malathion	108	106	P/P	67 - 126
Metalaxyl	75.9	71.3	P/P	54 - 128
Metolachlor	107	117	P/P	71 - 118
Metribuzin	88.8	87.5	P/P	42 - 221
Mevinphos	96.0	98.0	P/P	45 - 114
Molinate	89.4	90.3	P/P	33 - 91.0
Norflurazon	78.5	102	P/P	60 - 123
Oxadiazon	111	114	P/P	66 - 121
Parathion Ethyl	95.3	102	P/P	73 - 111

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P363660

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Methyl	96.0	101	P/P	74 - 126
Pendimethalin	94.5	97.2	P/P	63 - 131
Phorate	86.2	77.5	P/P	54 - 115
Prodiamine	110	117	P/P	38 - 140
Prometon	54.1	87.6	F/P	61 - 120
Prometryn	91.5	106	P/P	62 - 126
Simazine	97.4	106	P/P	75 - 126
Tebuconazole	16.3	64.0	F/P	21 - 115
Terbufos	89.4	86.2	P/P	65 - 116
Terbuthylazine	103	111	P/P	73 - 117

Reference Method: EPA 8270E

Batch ID: P364350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dimethenamid	134	135	P/P	46 - 139

Reference Method: EPA 8321B

Batch ID: P363505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.6		P	40 - 150
Acetaminophen	92.9		P	30 - 150
Bentazon	106		P	30 - 150
Carbamazepine	92.2		P	40 - 150
Diuron	90.4		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	95.3		P	40 - 150
Hydrocodone	96.5		P	40 - 150
Ibuprofen	82.0		P	40 - 150
Imazapyr	93.1		P	40 - 150
Imidacloprid	96.7		P	40 - 150
Linuron	73.3		P	40 - 150
MCPP	94.5		P	40 - 150
Naproxen	81.0		P	40 - 150
Primidone	90.8		P	40 - 150
Pyraclostrobin	74.1		P	40 - 150
Triclopyr	58.2		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P363636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	114		P	40 - 150
AMPA	94.2		P	40 - 150
Endothall	105		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	116		P	40 - 140
Sucralose	101		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P363563

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

Reference Method: SM 2320 B-97
Batch ID: P364170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P363686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083973	Barium	99.0		P	80 - 120
2083973	Calcium	100		P	80 - 120
2083973	Iron	99.5		P	80 - 120
2083973	Magnesium	105		P	80 - 120
2083973	Potassium	97.1		P	80 - 120
2083973	Sodium	102		P	80 - 120
2083973	Zinc	99.6		P	80 - 120
2084515	Barium	98.1	99.9	P/P	80 - 120
2084515	Calcium	100		P	80 - 120
2084515	Iron	101	103	P/P	80 - 120
2084515	Magnesium	101	105	P/P	80 - 120
2084515	Potassium	96.7		P	80 - 120
2084515	Sodium	101		P	80 - 120
2084515	Zinc	102	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P363686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083973	Aluminum	94.1		P	80 - 120
2083973	Antimony	97.4		P	80 - 120
2083973	Arsenic	99.9		P	80 - 120
2083973	Boron	95.7		P	80 - 120
2083973	Cadmium	98.2		P	80 - 120
2083973	Chromium	99.4		P	80 - 120
2083973	Copper	97.6		P	80 - 120
2083973	Lead	100		P	80 - 120
2083973	Nickel	98.6		P	80 - 120
2083973	Selenium	99.6		P	80 - 120
2083973	Silver	96.8		P	80 - 120
2083973	Thallium	103		P	80 - 120
2084515	Aluminum	93.9	93.5	P/P	80 - 120
2084515	Antimony	98.3	97.1	P/P	80 - 120
2084515	Arsenic	102	99.6	P/P	80 - 120
2084515	Boron	93.8	92.4	P/P	80 - 120
2084515	Cadmium	98.9	98.9	P/P	80 - 120
2084515	Chromium	97.1	96.7	P/P	80 - 120
2084515	Copper	98.2	96.3	P/P	80 - 120
2084515	Lead	99.7	99.1	P/P	80 - 120
2084515	Nickel	98.7	98.1	P/P	80 - 120
2084515	Selenium	99.6	97.1	P/P	80 - 120
2084515	Silver	96.5	94.0	P/P	80 - 120
2084515	Thallium	103	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P363823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084275	Chloride	99.3		P	90 - 110
2084358	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084275	Sulfate	99.9		P	90 - 110
2084358	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084361	Ammonia-N	99.7	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084287	Kjeldahl Nitrogen	99.9	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084169	NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084276	Total-P	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084277	O-Phosphate-P	98.2	99.8	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P363660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084294	Acetochlor	90.2	90.5	P/P	63 - 129
2084294	Alachlor	88.1	91.6	P/P	65 - 127
2084294	Ametryn	114	112	P/P	40 - 164
2084294	Atrazine	99.5	103	P/P	66 - 135
2084294	Atrazine Desethyl	69.1	66.6	P/P	14 - 157
2084294	Azinphos Methyl	81.0	89.9	P/P	49 - 180
2084294	Bromacil	123	125	P/P	48 - 130
2084294	Butylate	47.8	50.0	P/P	10 - 94.0
2084294	Chlorpyrifos Ethyl	89.9	87.8	P/P	58 - 123
2084294	Chlorpyrifos Methyl	84.7	83.7	P/P	58 - 125
2084294	Cyanazine	76.4	81.0	P/P	24 - 253
2084294	Demeton	70.0	72.6	P/P	25 - 149
2084294	Diazinon	87.8	86.3	P/P	59 - 144
2084294	Disulfoton	79.9	77.2	P/P	54 - 132
2084294	Dithiopyr	88.4	88.0	P/P	64 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P363660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084294	EPTC	45.0	53.3	P/P	10 - 92.0
2084294	Ethion	93.9	93.3	P/P	30 - 148
2084294	Ethoprop	90.5	88.7	P/P	50 - 130
2084294	Fenamiphos	85.6	85.1	P/P	49 - 142
2084294	Fipronil	90.8	95.5	P/P	46 - 140
2084294	Fipronil Desulfinyl	83.0	87.7	P/P	30 - 121
2084294	Fipronil Sulfide	95.1	113	P/P	31 - 136
2084294	Fipronil Sulfone	90.3	92.9	P/P	16 - 136
2084294	Fonofos	84.9	82.1	P/P	55 - 129
2084294	Hexazinone	117	121	P/P	56 - 141
2084294	Malathion	96.8	95.8	P/P	56 - 135
2084294	Metalaxyl	81.8	84.1	P/P	54 - 135
2084294	Metolachlor	92.2	93.3	P/P	51 - 140
2084294	Metribuzin	93.9	98.7	P/P	45 - 254
2084294	Mevinphos	93.7	95.0	P/P	33 - 131
2084294	Molinate	66.7	70.6	P/P	14 - 98.0
2084294	Norflurazon	85.8	90.4	P/P	34 - 136
2084294	Oxadiazon	89.3	91.0	P/P	67 - 116
2084294	Parathion Ethyl	91.8	89.3	P/P	66 - 118
2084294	Parathion Methyl	98.6	93.2	P/P	64 - 136
2084294	Pendimethalin	90.2	85.2	P/P	59 - 144
2084294	Phorate	79.5	77.7	P/P	42 - 130
2084294	Prodiamine	99.2	101	P/P	42 - 148
2084294	Prometon	147	124	F/P	59 - 134
2084294	Prometryn	86.9	86.8	P/P	54 - 135
2084294	Simazine	93.6	97.1	P/P	53 - 156
2084294	Tebuconazole	79.0	81.4	P/P	10 - 131
2084294	Terbufos	85.4	85.0	P/P	57 - 131
2084294	Terbutylazine	91.0	94.7	P/P	68 - 125

Reference Method: EPA 8270E

Batch ID: P364350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084283	Dimethenamid	92.0		P	46 - 139

Reference Method: EPA 8321B

Batch ID: P363505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	2,4-D	98.5	111	P/P	40 - 150
2083598	Acetaminophen	80.4	84.2	P/P	30 - 150
2083598	Bentazon	47.6	47.5	P/P	30 - 150
2083598	Carbamazepine	67.0	66.1	P/P	40 - 150
2083598	Diuron	57.1	58.7	P/P	40 - 150
2083598	Fenuron	73.8	73.6	P/P	40 - 150
2083598	Fluridone	64.3	70.7	P/P	40 - 150
2083598	Hydrocodone	81.2	84.0	P/P	40 - 150
2083598	Ibuprofen	65.2	68.1	P/P	40 - 150
2083598	Imazapyr	120	110	P/P	40 - 150
2083598	Imidacloprid	103	101	P/P	40 - 150
2083598	Linuron	47.2	50.2	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B**Batch ID: P363505**

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	MCP	130	130	P/P	40 - 150
2083598	Naproxen	78.5	82.8	P/P	40 - 150
2083598	Primidone	88.4	89.5	P/P	40 - 150
2083598	Pyraclostrobin	83.9	85.6	P/P	40 - 150
2083598	Triclopyr	72.9	85.5	P/P	40 - 150

Reference Method: EPA 8321B**Batch ID: P363636**

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	Acesulfame K	78.8	97.1	P/P	40 - 150
2083598	AMPA	45.4	40.4	P/P	40 - 150
2083598	Endothall	91.8	94.5	P/P	40 - 150
2083598	Glufosinate	70.8	68.1	P/P	40 - 150
2083598	Glyphosate	96.5	86.6	P/P	40 - 140
2083598	Sucralose	103	102	P/P	40 - 150

Reference Method: SM 4500 F-C-97**Batch ID: P364174**

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084386	Fluoride	96.1	95.6	P/P	89 - 106

Reference Method: SM 5310 B-00**Batch ID: P363993**

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084109	Organic Carbon	88.6	91.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084286	Turbidity	3.37	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084515	Barium	1.84	Spike	P	0 - 20
2084515	Calcium	1.03	Spike	P	0 - 20
2084515	Iron	2.61	Spike	P	0 - 20
2084515	Magnesium	2.41	Spike	P	0 - 20
2084515	Potassium	1.42	Spike	P	0 - 20
2084515	Sodium	2.01	Spike	P	0 - 20
2084515	Zinc	2.09	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084515	Aluminum	0.390	Spike	P	0 - 20
2084515	Antimony	1.29	Spike	P	0 - 20
2084515	Arsenic	2.05	Spike	P	0 - 20
2084515	Boron	0.952	Spike	P	0 - 20
2084515	Cadmium	0.0298	Spike	P	0 - 20
2084515	Chromium	0.420	Spike	P	0 - 20
2084515	Copper	1.96	Spike	P	0 - 20
2084515	Lead	0.674	Spike	P	0 - 20
2084515	Nickel	0.644	Spike	P	0 - 20
2084515	Selenium	2.46	Spike	P	0 - 20
2084515	Silver	2.62	Spike	P	0 - 20
2084515	Thallium	0.673	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084358	Chloride	2.17	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084358	Sulfate	1.21	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084361	Ammonia-N	0.442	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084287	Kjeldahl Nitrogen	1.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084169	NO2NO3-N	0.256	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084276	Total-P	0.789	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084277	O-Phosphate-P	1.20	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P363660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084294	Acetochlor	0.379	Spike	P	0 - 30
2084294	Alachlor	3.83	Spike	P	0 - 30
2084294	Ametryn	1.08	Spike	P	0 - 30
2084294	Atrazine	1.53	Spike	P	0 - 30
2084294	Atrazine Desethyl	3.66	Spike	P	0 - 30
2084294	Azinphos Methyl	10.4	Spike	P	0 - 30
2084294	Bromacil	0.827	Spike	P	0 - 30
2084294	Butylate	4.53	Spike	P	0 - 30
2084294	Chlorpyrifos Ethyl	2.37	Spike	P	0 - 30
2084294	Chlorpyrifos Methyl	1.19	Spike	P	0 - 30
2084294	Cyanazine	5.83	Spike	P	0 - 30
2084294	Demeton	3.66	Spike	P	0 - 30
2084294	Diazinon	1.73	Spike	P	0 - 30
2084294	Disulfoton	3.40	Spike	P	0 - 30
2084294	Dithiopyr	0.472	Spike	P	0 - 30
2084294	EPTC	16.8	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P363660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084294	Ethion	0.652	Spike	P	0 - 30
2084294	Ethoprop	2.02	Spike	P	0 - 30
2084294	Fenamiphos	0.635	Spike	P	0 - 30
2084294	Fipronil	5.00	Spike	P	0 - 30
2084294	Fipronil Desulfinyl	5.53	Spike	P	0 - 30
2084294	Fipronil Sulfide	17.2	Spike	P	0 - 30
2084294	Fipronil Sulfone	2.86	Spike	P	0 - 30
2084294	Fonofos	3.32	Spike	P	0 - 30
2084294	Hexazinone	0.863	Spike	P	0 - 30
2084294	Malathion	1.05	Spike	P	0 - 30
2084294	Metalaxyl	2.83	Spike	P	0 - 30
2084294	Metolachlor	0.996	Spike	P	0 - 30
2084294	Metribuzin	4.99	Spike	P	0 - 30
2084294	Mevinphos	1.43	Spike	P	0 - 30
2084294	Molinate	5.75	Spike	P	0 - 30
2084294	Norflurazon	5.30	Spike	P	0 - 30
2084294	Oxadiazon	1.95	Spike	P	0 - 30
2084294	Parathion Ethyl	2.81	Spike	P	0 - 30
2084294	Parathion Methyl	5.70	Spike	P	0 - 30
2084294	Pendimethalin	5.64	Spike	P	0 - 30
2084294	Phorate	2.29	Spike	P	0 - 30
2084294	Prodiamine	2.26	Spike	P	0 - 30
2084294	Prometon	4.83	Spike	P	0 - 30
2084294	Prometryn	0.119	Spike	P	0 - 30
2084294	Simazine	2.82	Spike	P	0 - 30
2084294	Tebuconazole	2.58	Spike	P	0 - 30
2084294	Terbufos	0.497	Spike	P	0 - 30
2084294	Terbutylazine	3.99	Spike	P	0 - 30
LFB	Acetochlor	7.02	LCS	P	0 - 30
LFB	Alachlor	15.3	LCS	P	0 - 30
LFB	Ametryn	9.64	LCS	P	0 - 30
LFB	Atrazine	8.17	LCS	P	0 - 30
LFB	Atrazine Desethyl	3.54	LCS	P	0 - 30
LFB	Azinphos Methyl	9.98	LCS	P	0 - 30
LFB	Bromacil	19.7	LCS	P	0 - 30
LFB	Butylate	4.23	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	0.0112	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	0.836	LCS	P	0 - 30
LFB	Cyanazine	17.8	LCS	P	0 - 30
LFB	Demeton	12.3	LCS	P	0 - 30
LFB	Diazinon	6.50	LCS	P	0 - 30
LFB	Disulfoton	10.4	LCS	P	0 - 30
LFB	Dithiopyr	6.32	LCS	P	0 - 30
LFB	EPTC	0.243	LCS	P	0 - 30
LFB	Ethion	2.02	LCS	P	0 - 30
LFB	Ethoprop	1.61	LCS	P	0 - 30
LFB	Fenamiphos	21.7	LCS	P	0 - 30
LFB	Fipronil	14.3	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	12.1	LCS	P	0 - 30
LFB	Fipronil Sulfide	0.276	LCS	P	0 - 30
LFB	Fipronil Sulfone	7.59	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P363660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fonofos	0.875	LCS	P	0 - 30
LFB	Hexazinone	29.6	LCS	P	0 - 30
LFB	Malathion	1.32	LCS	P	0 - 30
LFB	Metalaxyl	6.20	LCS	P	0 - 30
LFB	Metolachlor	8.95	LCS	P	0 - 30
LFB	Metribuzin	1.50	LCS	P	0 - 30
LFB	Mevinphos	2.08	LCS	P	0 - 30
LFB	Molinate	0.950	LCS	P	0 - 30
LFB	Norflurazon	25.8	LCS	P	0 - 30
LFB	Oxadiazon	2.17	LCS	P	0 - 30
LFB	Parathion Ethyl	6.30	LCS	P	0 - 30
LFB	Parathion Methyl	5.56	LCS	P	0 - 30
LFB	Pendimethalin	2.78	LCS	P	0 - 30
LFB	Phorate	10.6	LCS	P	0 - 30
LFB	Prodiamine	6.57	LCS	P	0 - 30
LFB	Prometon	47.2	LCS	F	0 - 30
LFB	Prometryn	14.4	LCS	P	0 - 30
LFB	Simazine	8.89	LCS	P	0 - 30
LFB	Tebuconazole	119	LCS	F	0 - 30
LFB	Terbufos	3.57	LCS	P	0 - 30
LFB	Terbutylazine	7.96	LCS	P	0 - 30

Reference Method: EPA 8270E

Batch ID: P364350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Dimethenamid	0.842	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P363505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083598	2,4-D	8.42	Spike	P	0 - 30
2083598	Acetaminophen	4.59	Spike	P	0 - 30
2083598	Bentazon	0.00936	Spike	P	0 - 30
2083598	Carbamazepine	1.36	Spike	P	0 - 30
2083598	Diuron	1.87	Spike	P	0 - 30
2083598	Fenuron	0.363	Spike	P	0 - 30
2083598	Fluridone	2.04	Spike	P	0 - 30
2083598	Hydrocodone	3.40	Spike	P	0 - 30
2083598	Ibuprofen	4.39	Spike	P	0 - 30
2083598	Imazapyr	4.74	Spike	P	0 - 30
2083598	Imidacloprid	0.639	Spike	P	0 - 30
2083598	Linuron	6.12	Spike	P	0 - 30
2083598	MCP	0.285	Spike	P	0 - 30
2083598	Naproxen	5.43	Spike	P	0 - 30
2083598	Primidone	1.21	Spike	P	0 - 30
2083598	Pyraclostrobin	2.00	Spike	P	0 - 30
2083598	Triclopyr	16.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P363636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083598	Acesulfame K	20.8	Spike	P	0 - 30
2083598	AMPA	4.87	Spike	P	0 - 30
2083598	Endothall	2.81	Spike	P	0 - 30
2083598	Glufosinate	3.82	Spike	P	0 - 30
2083598	Glyphosate	4.74	Spike	P	0 - 30
2083598	Sucralose	0.535	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P363563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084275	Color (true)	0.469	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P364170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084386	Total Alkalinity	0.743	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084076	TDS	1.42	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084386	Fluoride	0.476	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084109	Organic Carbon	1.94	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: 2084281
Field Sample ID: G1WA0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.8	P	30 - 160
EPA 8321B	Diuron-d6	72.0	P	30 - 160
EPA 8321B	Endothall-d6	98.1	P	30 - 160
EPA 8321B	Endothall-d6	98.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.5	P	30 - 160
EPA 8321B	Primidone-d5	84.9	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Lab Sample ID: 2084283
Field Sample ID: G1WA0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	98.0	P	68 - 130
EPA 8270E	Simazine-d10	105	P	68 - 130
EPA 8270E	Terbufos-d10	81.7	P	61 - 136
EPA 8270E	Terbufos-d10	87.1	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91228

Included Lab Sample IDs: 2084275

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91261

Included Lab Sample IDs: 2084275

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

Reference Method: SM 2120 B

Run ID: A91273

Included Lab Sample IDs: 2084275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A91312

Included Lab Sample IDs: 2084277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91347

Included Lab Sample IDs: 2084281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	63.3	121	P/P	60 - 160
Endothall	110	109	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91366

Included Lab Sample IDs: 2084282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	100	P/P	90 - 110
Calcium	102	99.5	P/P	90 - 110
Iron	101	98.7	P/P	90 - 110
Magnesium	101	98.8	P/P	90 - 110
Potassium	102	98.6	P/P	90 - 110
Sodium	106	103	P/P	90 - 110
Zinc	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91377

Included Lab Sample IDs: 2084276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.5	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8321B

Run ID: A91381

Included Lab Sample IDs: 2084281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	108	111	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91399

Included Lab Sample IDs: 2084282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.2	92.8	P/P	90 - 110
Antimony	94.8	93.3	P/P	90 - 110
Arsenic	96.5	95.4	P/P	90 - 110
Boron	95.4	92.6	P/P	90 - 110
Cadmium	95.4	93.8	P/P	90 - 110
Chromium	96.0	94.8	P/P	90 - 110
Copper	95.9	94.4	P/P	90 - 110
Lead	97.4	96.5	P/P	90 - 110
Nickel	95.7	94.9	P/P	90 - 110
Selenium	96.2	94.2	P/P	90 - 110
Silver	93.4	92.2	P/P	90 - 110
Thallium	95.0	93.5	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A91401

Included Lab Sample IDs: 2084283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	101		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	103		P	80 - 120
Atrazine	102		P	80 - 120
Atrazine Desethyl	90.4		P	80 - 120
Azinphos Methyl	96.0		P	80 - 120
Bromacil	100		P	80 - 120
Butylate	99.7		P	80 - 120
Chlorpyrifos Ethyl	97.9		P	80 - 120
Chlorpyrifos Methyl	100		P	80 - 120
Cyanazine	86.2		P	80 - 120
Demeton	98.8		P	80 - 120
Diazinon	99.5		P	80 - 120
Disulfoton	97.1		P	80 - 120
Dithiopyr	98.1		P	80 - 120
EPTC	97.8		P	80 - 120
Ethion	99.5		P	80 - 120
Ethoprop	97.3		P	80 - 120
Fenamiphos	97.5		P	80 - 120
Fipronil	99.5		P	80 - 120
Fipronil Desulfinyl	96.6		P	80 - 120
Fipronil Sulfide	96.8		P	80 - 120
Fipronil Sulfone	94.0		P	80 - 120
Fonofos	98.7		P	80 - 120
Hexazinone	97.4		P	80 - 120
Malathion	96.1		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270E

Run ID: A91401

Included Lab Sample IDs: 2084283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Metalaxyl	103		P	80 - 120
Metolachlor	105		P	80 - 120
Metribuzin	89.1		P	80 - 120
Mevinphos	103		P	80 - 120
Molinate	99.2		P	80 - 120
Norflurazon	101		P	80 - 120
Oxadiazon	104		P	80 - 120
Parathion Ethyl	95.5		P	80 - 120
Parathion Methyl	97.9		P	80 - 120
Pendimethalin	91.4		P	80 - 120
Phorate	96.9		P	80 - 120
Prodiamine	87.8		P	80 - 120
Prometon	98.0		P	80 - 120
Prometryn	103		P	80 - 120
Simazine	99.4		P	80 - 120
Tebuconazole	101		P	80 - 120
Terbufos	98.5		P	80 - 120
Terbuthylazine	101		P	80 - 120

Reference Method: EPA 8321B

Run ID: A91409

Included Lab Sample IDs: 2084281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	129	115	P/P	60 - 160
Glufosinate	115	100	P/P	60 - 160
Glyphosate	127	112	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91412

Included Lab Sample IDs: 2084276

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91427

Included Lab Sample IDs: 2084276

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

Reference Method: SM 5310 B-00

Run ID: A91449

Included Lab Sample IDs: 2084276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.0	92.2	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8321B

Run ID: A91464

Included Lab Sample IDs: 2084281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	104	P/P	50 - 150
Acetaminophen	112	105	P/P	60 - 160
Bentazon	107	134	P/P	50 - 160
Carbamazepine	97.9	99.8	P/P	60 - 150
Diuron	100	101	P/P	60 - 150
Fenuron	103	105	P/P	60 - 150
Fluridone	107	107	P/P	60 - 160
Hydrocodone	101	96.2	P/P	60 - 150
Ibuprofen	113	114	P/P	50 - 160
Imazapyr	92.9	112	P/P	50 - 150
Imidacloprid	99.4	76.4	P/P	60 - 150
Linuron	91.3	91.7	P/P	60 - 150
MCPP	93.6	105	P/P	50 - 150
Naproxen	114	94.1	P/P	50 - 160
Primidone	95.9	97.1	P/P	60 - 150
Pyraclostrobin	106	107	P/P	60 - 150
Triclopyr	101	103	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91485

Included Lab Sample IDs: 2084276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91513

Included Lab Sample IDs: 2084275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91513

Included Lab Sample IDs: 2084275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.6	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A91581

Included Lab Sample IDs: 2084283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dimethenamid	101		P	80 - 120

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.37	
EPA 200.7 Rev. 4.4	Barium	99.5		99.0	98.1	99.9			1.84
	Calcium	99.3		100	100				1.03
	Iron	100		99.5	101	103			2.61
	Magnesium	107		105	101	105			2.41
	Potassium	99.4		97.1	96.7				1.42
	Sodium	101		102	101				2.01
	Zinc	98.2		99.6	102	105			2.09
EPA 200.8 Rev. 5.4	Aluminum	96.0		94.1	93.9	93.5			0.390
	Antimony	98.2		97.4	98.3	97.1			1.29
	Arsenic	102		99.9	102	99.6			2.05
	Boron	97.5		95.7	93.8	92.4			0.952
	Cadmium	100		98.2	98.9	98.9			0.0298
	Chromium	99.3		99.4	97.1	96.7			0.420
	Copper	99.6		97.6	98.2	96.3			1.96
	Lead	100		100	99.7	99.1			0.674
	Nickel	99.9		98.6	98.7	98.1			0.644
	Selenium	101		99.6	99.6	97.1			2.46
	Silver	98.4		96.8	96.5	94.0			2.62
	Thallium	103		103	103	102			0.673
EPA 300.0 Rev. 2.1	Chloride	99.8		100	99.3			2.17	
	Sulfate	99.6		99.9	99.9			1.21	
EPA 350.1 Rev. 2.0	Ammonia-N	101		99.7	99.2				0.442
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.7		99.9	101				1.15
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5		98.0	97.5				0.256
EPA 365.1 Rev. 2.0	Total-P	100		99.0	98.0				0.789
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8		98.2	99.8				1.20
EPA 8270E	Acetochlor	103	111	90.2	90.5		7.02		0.379
	Alachlor	96.2	112	88.1	91.6		15.3		3.83
	Ametryn	102	112	114	112		9.64		1.08
	Atrazine	105	114	99.5	103		8.17		1.53
	Atrazine Desethyl	45.7	47.3	69.1	66.6		3.54		3.66
	Azinphos Methyl	98.5	109	81.0	89.9		9.98		10.4
	Bromacil	83.8	102	123	125		19.7		0.827
	Butylate	78.6	82.0	47.8	50.0		4.23		4.53
	Chlorpyrifos Ethyl	101	101	89.9	87.8		0.0112		2.37
	Chlorpyrifos Methyl	96.1	95.3	84.7	83.7		0.836		1.19
	Cyanazine	60.9	50.9	76.4	81.0		17.8		5.83
	Demeton	80.6	71.3	70.0	72.6		12.3		3.66
	Diazinon	99.1	106	87.8	86.3		6.50		1.73
	Dimethenamid	134	135	92.0			0.842		
	Disulfoton	86.2	77.7	79.9	77.2		10.4		3.40
	Dithiopyr	103	110	88.4	88.0		6.32		0.472
	EPTC	78.8	79.0	45.0	53.3		0.243		16.8
	Ethion	111	113	93.9	93.3		2.02		0.652
	Ethoprop	102	103	90.5	88.7		1.61		2.02
	Fenamiphos	73.3	58.9	85.6	85.1		21.7		0.635
	Fipronil	97.5	113	90.8	95.5		14.3		5.00
	Fipronil Desulfinyl	94.5	107	83.0	87.7		12.1		5.53
	Fipronil Sulfide	106	105	95.1	113		0.276		17.2
	Fipronil Sulfone	97.3	105	90.3	92.9		7.59		2.86
	Fonofos	91.1	91.9	84.9	82.1		0.875		3.32
	Hexazinone	86.5	116	117	121		29.6		0.863
	Malathion	108	106	96.8	95.8		1.32		1.05

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Metalaxyl	75.9	71.3	81.8	84.1	6.20	2.83
	Metolachlor	107	117	92.2	93.3	8.95	0.996
	Metribuzin	88.8	87.5	93.9	98.7	1.50	4.99
	Mevinphos	96.0	98.0	93.7	95.0	2.08	1.43
	Molinate	89.4	90.3	66.7	70.6	0.950	5.75
	Norflurazon	78.5	102	85.8	90.4	25.8	5.30
	Oxadiazon	111	114	89.3	91.0	2.17	1.95
	Parathion Ethyl	95.3	102	91.8	89.3	6.30	2.81
	Parathion Methyl	96.0	101	98.6	93.2	5.56	5.70
	Pendimethalin	94.5	97.2	90.2	85.2	2.78	5.64
	Phorate	86.2	77.5	79.5	77.7	10.6	2.29
	Prodiamine	110	117	99.2	101	6.57	2.26
	Prometon	54.1	87.6	147	124	47.2	4.83
	Prometryn	91.5	106	86.9	86.8	14.4	0.119
	Simazine	97.4	106	93.6	97.1	8.89	2.82
	Tebuconazole	16.3	64.0	79.0	81.4	119	2.58
	Terbufos	89.4	86.2	85.4	85.0	3.57	0.497
	Terbuthylazine	103	111	91.0	94.7	7.96	3.99
EPA 8321B	2,4-D	89.6		98.5	111		8.42
	Acesulfame K	114		78.8	97.1		20.8
	Acetaminophen	92.9		80.4	84.2		4.59
	AMPA	94.2		45.4	40.4		4.87
	Bentazon	106		47.6	47.5		0.0093
	Carbamazepine	92.2		67.0	66.1		1.36
	Diuron	90.4		57.1	58.7		1.87
	Endothall	105		91.8	94.5		2.81
	Fenuron	102		73.8	73.6		0.363
	Fluridone	95.3		64.3	70.7		2.04
	Glufosinate	110		70.8	68.1		3.82
	Glyphosate	116		96.5	86.6		4.74
	Hydrocodone	96.5		81.2	84.0		3.40
	Ibuprofen	82.0		65.2	68.1		4.39
	Imazapyr	93.1		120	110		4.74
	Imidacloprid	96.7		103	101		0.639
	Linuron	73.3		47.2	50.2		6.12
	MCPP	94.5		130	130		0.285
	Naproxen	81.0		78.5	82.8		5.43
	Primidone	90.8		88.4	89.5		1.21
SM 2120 B	Color (true)	102				0.469	
	Total Alkalinity	102				0.743	
SM 2540 C-97	TDS					1.42	
SM 4500 F-C-97	Fluoride	96.7		96.1	95.6		0.476
SM 5310 B-00	Organic Carbon	89.4		88.6	91.4		1.94

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2084275

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	2084282
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2084282
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2084275
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2084275
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2084276
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2084276
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2084276
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2084276
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2084277
EPA 8270E / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2084283
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2084281
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2084281
SM 2120 B / E31780	True Color measured at 450 nm	2084275
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2084275
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2084275
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2084275
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2084275
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2084276

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	05/07/2019			05/07/2019 16:30	Adrian Shelby	2084275
EPA 200.7 Rev. 4.4	05/07/2019	05/09/2019 14:50	Elliott D. Healy	05/10/2019 16:11	Betina Topolski	2084282
EPA 200.8 Rev. 5.4	05/07/2019	05/09/2019 14:50	Elliott D. Healy	05/13/2019 19:49	Martin Acosta	2084282
EPA 300.0 Rev. 2.1	05/07/2019			05/10/2019 23:19	Lipi Saha	2084275
EPA 350.1 Rev. 2.0	05/07/2019			05/13/2019 12:11	Ping Hua	2084276
EPA 351.2 Rev. 2.0	05/07/2019	05/14/2019 12:30	Adrian Shelby	05/16/2019 10:42	Joseph Suarez	2084276
EPA 353.2 Rev. 2.0	05/07/2019			05/13/2019 11:31	Beverly Y. Sanders	2084276
EPA 365.1 Rev. 2.0	05/07/2019	05/10/2019 08:53	Joseph Suarez	05/14/2019 15:01	Rosalyn Ballman	2084276
EPA 365.1 Rev. 2.0 dissolved	05/07/2019			05/08/2019 14:31	Jhamieka S. Greenwood	2084277
EPA 8270E	05/07/2019	05/09/2019 08:00	Rasheda Ghaffari	05/13/2019 17:26	Dinesh Mishra	2084283
	05/07/2019	05/17/2019 08:00	Rasheda Ghaffari	05/21/2019 17:39	Dinesh Mishra	2084283
EPA 8321B	05/07/2019	05/09/2019 11:00	Rebecca Ware	05/09/2019 18:40	Rebecca Ware	2084281
	05/07/2019	05/09/2019 11:00	Rebecca Ware	05/11/2019 21:21	Rebecca Ware	2084281
	05/07/2019	05/09/2019 11:00	Rebecca Ware	05/12/2019 21:23	Rebecca Ware	2084281
	05/07/2019	05/09/2019 13:00	Hoor Shaik	05/17/2019 06:22	Juyoung Kim	2084281
SM 2120 B	05/07/2019			05/07/2019 17:30	Mariam Hanna	2084275
SM 2320 B-97	05/07/2019			05/16/2019 23:55	Dale L. Simmons	2084275
SM 2540 C-97	05/07/2019			05/08/2019 16:15	Mariam Hanna	2084275
SM 2540 D-97	05/07/2019			05/08/2019 17:47	Mariam Hanna	2084275
SM 4500 F-C-97	05/07/2019			05/16/2019 23:55	Dale L. Simmons	2084275
SM 5310 B-00	05/07/2019			05/15/2019 02:35	Julia Storbeck	2084276