

Chemical Analysis Report

SW-DIST-2019-05-10-03

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

Event Description: **SCI Kit**
Request ID: **RQ-2019-03-11-32**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-JUN-2019 11:37

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: ALAFIA RIVER ab HILLSBOROUGH

Collection Date/Time: 05/09/2019 12:30

Field ID: G2SW0116

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085681	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P363793	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P364028	
		Sulfate	75		mg SO4/L	P364030	
		Color (true)	36		PCU	P363787	
	SM 2120 B	Total Alkalinity	114		mg CaCO3/L	P364261	
	SM 2540 C-97	TDS	310	A	mg/L	P364271	
	SM 2540 D-97	TSS	3	IA	mg/L	P364257	
2085682	SM 4500 F-C-97	Fluoride	0.85		mg F/L	P364266	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P364151	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P364233	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P364211	
	EPA 365.1 Rev. 2.0	Total-P	0.59		mg P/L	P364106	
2085683	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P364107	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.52		mg P/L	P363796	
2085690	EPA 8321B	2,4-D	0.0064	I	ug/L	P363772	
		Acesulfame K**	0.10	U	ug/L	P363863	
		AMPA**	0.47		ug/L	P363863	
		Sucralose**	1.4		ug/L	P363863	
		Acetaminophen**	0.0080	U	ug/L	P363772	
		Endothall**	0.25	U	ug/L	P363863	
		Glufosinate**	0.10	U	ug/L	P363863	
		Bentazon	0.031		ug/L	P363772	
		Glyphosate**	0.69		ug/L	P363863	
		Carbamazepine**	0.0076		ug/L	P363772	
		Diuron	0.0039	I	ug/L	P363772	
		Fenuron	0.016	U	ug/L	P363772	
		Fluridone**	0.0098		ug/L	P363772	
		Imazapyr**	0.20		ug/L	P363772	
		Hydrocodone**	0.0020	U	ug/L	P363772	
		Ibuprofen**	0.020	U	ug/L	P363772	
		Imidacloprid	0.031		ug/L	P363772	MS
		Linuron	0.0040	U	ug/L	P363772	
		MCPP	0.0028	I	ug/L	P363772	
		Naproxen**	0.0080	U	ug/L	P363772	
		Primidone**	0.015	I	ug/L	P363772	
		Pyraclostrobin**	0.0020	U	ug/L	P363772	
		Triclopyr**	0.0040	U	ug/L	P363772	
2085691	EPA 200.7 Rev. 4.4	Barium	8.6		ug/L	P363918	
		Calcium	53.0		mg/L	P363918	
		Iron	140		ug/L	P363918	
		Magnesium	14.9		mg/L	P363918	
		Potassium	3.0		mg/L	P363918	
		Sodium	25.1		mg/L	P363918	

Field ID: G2SW0116

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085691	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P363918	
	EPA 200.8 Rev. 5.4	Aluminum	82		ug/L	P363918	
		Antimony	0.17	I	ug/L	P363918	
		Arsenic	1.60		ug/L	P363918	
		Boron**	67.2		ug/L	P363918	
		Cadmium	0.051	I	ug/L	P363918	
		Chromium	0.63	I	ug/L	P363918	
		Copper	0.70	I	ug/L	P363918	
		Lead	0.20	U	ug/L	P363918	
		Nickel	1.1	I	ug/L	P363918	
		Selenium	0.64	I	ug/L	P363918	
		Silver	0.010	U	ug/L	P363918	
		Thallium	0.10	U	ug/L	P363918	
2085692	EPA 8270E	Acetochlor	0.25	U	ng/L	P364041	
		Alachlor	0.25	U	ng/L	P364041	
		Ametryn	0.59	UJ	ng/L	P364041	RPD
		Atrazine	44		ng/L	P364041	
		Atrazine Desethyl	5.9		ng/L	P364041	
		Azinphos Methyl	4.9	U	ng/L	P364041	
		Bromacil	19		ng/L	P364041	
		Butylate	0.39	UJ	ng/L	P364041	RPD
		Chlorpyrifos Ethyl	0.25	U	ng/L	P364041	
		Chlorpyrifos Methyl	0.098	U	ng/L	P364041	
		Cyanazine	3.2	U	ng/L	P364041	
		Demeton	6.9	U	ng/L	P364041	
		Diazinon	0.12	U	ng/L	P364041	
		Dimethenamid**	13		ng/L	P364041	
		Disulfoton	0.49	U	ng/L	P364041	
		Dithiopyr**	0.32	I	ng/L	P364041	
		EPTC	1.2	UJ	ng/L	P364041	RPD
		Ethion	0.15	U	ng/L	P364041	
		Ethoprop	0.098	U	ng/L	P364041	
		Fenamiphos	0.49	UJ	ng/L	P364041	LCS, RPD
		Fipronil	5.2		ng/L	P364041	
		Fipronil Desulfinyl**	2.4		ng/L	P364041	
		Fipronil Sulfide	0.86	J	ng/L	P364041	MS
		Fipronil Sulfone	2.1	J	ng/L	P364041	RPD
		Fonofos	0.20	U	ng/L	P364041	
		Hexazinone	1.8	IJ	ng/L	P364041	MS, RPD
		Malathion	0.34	U	ng/L	P364041	
		Metalaxyl	2.1	J	ng/L	P364041	LCS, RPD
		Metolachlor	0.97	I	ng/L	P364041	
		Metribuzin	0.74	U	ng/L	P364041	
		Mevinphos	0.49	UJ	ng/L	P364041	RPD
		Molinate	0.30	U	ng/L	P364041	

Field ID: G2SW0116

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085692	EPA 8270E	Norflurazon	12	J	ng/L	P364041	RPD
		Oxadiazon**	0.27	I	ng/L	P364041	
		Parathion Ethyl	0.25	U	ng/L	P364041	
		Parathion Methyl	0.54	U	ng/L	P364041	
		Pendimethalin	0.98	U	ng/L	P364041	
		Phorate	0.25	U	ng/L	P364041	
		Prodiamine**	0.21	I	ng/L	P364041	
		Prometon	0.95	IJ	ng/L	P364041	
		Prometryn	0.20	U	ng/L	P364041	
		Simazine	1.3	I	ng/L	P364041	
		Tebuconazole**	15	J	ng/L	P364041	RPD
		Terbufos	0.098	U	ng/L	P364041	
		Terbuthylazine	0.69	I	ng/L	P364041	

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: MS accuracies for atrazine, dimethenamid, tebuconazole, fipronil, norflurazon, and bromacil 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: P363793

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363918

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: P363918

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: P364028

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364030

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364151

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: P364233

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364211

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364106

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363796

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

Reference Method: EPA 8270E
Batch ID: P364041

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	0.16	I	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.30	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P364041

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: P363772

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: P363863

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: P363787

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P364261

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

Reference Method: SM 2540 C-97
Batch ID: P364271

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364257

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364266

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P364107

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: P363918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	109		P	85 - 115
Iron	106		P	85 - 115
Magnesium	113		P	85 - 115
Potassium	102		P	85 - 115
Sodium	102		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	105		P	85 - 115
Boron	101		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	101		P	85 - 115
Copper	104		P	85 - 115
Lead	93.9		P	85 - 115
Nickel	104		P	85 - 115
Selenium	104		P	85 - 115
Silver	103		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364030

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364151

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364233

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P364211

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P364106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P363796

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.4		P	90 - 110

Reference Method: EPA 8270E
 Batch ID: P364041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	108	107	P/P	71 - 121
Alachlor	108	107	P/P	72 - 119
Ametryn	76.8	116	P/P	47 - 144
Atrazine	116	119	P/P	75 - 123
Atrazine Desethyl	61.5	60.6	P/P	45 - 133
Azinphos Methyl	96.2	115	P/P	66 - 165
Bromacil	48.5	63.7	P/P	43 - 123
Butylate	69.7	75.9	P/P	27 - 83.0
Chlorpyrifos Ethyl	98.5	103	P/P	70 - 117
Chlorpyrifos Methyl	89.6	92.6	P/P	71 - 120
Cyanazine	74.3	62.0	P/P	34 - 264
Demeton	54.4	49.2	P/P	41 - 122
Diazinon	99.9	98.1	P/P	70 - 127
Dimethenamid	116	110	P/P	66 - 123
Disulfoton	63.4	57.1	P/P	56 - 127
Dithiopyr	107	105	P/P	67 - 125
EPTC	66.5	72.1	P/P	24 - 84.0
Ethion	115	121	P/P	53 - 132
Ethoprop	106	109	P/P	57 - 117
Fenamiphos	11.1	33.3	F/F	55 - 136
Fipronil	97.5	106	P/P	64 - 126
Fipronil Desulfinyl	105	111	P/P	47 - 114
Fipronil Sulfide	113	117	P/P	57 - 120
Fipronil Sulfone	111	115	P/P	52 - 115
Fonofos	79.3	84.1	P/P	61 - 121
Hexazinone	66.4	127	P/P	62 - 131
Malathion	106	114	P/P	67 - 126
Metalaxyl	0.748	2.41	F/F	54 - 128
Metolachlor	110	111	P/P	71 - 118
Metribuzin	97.0	87.2	P/P	42 - 221
Mevinphos	53.6	76.7	P/P	45 - 114
Molinate	80.6	85.5	P/P	33 - 91.0
Norflurazon	71.1	96.5	P/P	60 - 123
Oxadiazon	116	115	P/P	66 - 121

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P364041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	96.0	100	P/P	73 - 111
Parathion Methyl	95.6	99.7	P/P	74 - 126
Pendimethalin	93.0	88.2	P/P	63 - 131
Phorate	63.3	60.5	P/P	54 - 115
Prodiamine	84.8	85.9	P/P	38 - 140
Prometon	42.9	99.7	F/P	61 - 120
Prometryn	96.0	106	P/P	62 - 126
Simazine	103	108	P/P	75 - 126
Tebuconazole	33.2	50.0	P/P	21 - 115
Terbufos	79.4	80.2	P/P	65 - 116
Terbutylazine	109	108	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P363772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.8		P	40 - 150
Acetaminophen	99.2		P	30 - 150
Bentazon	125		P	30 - 150
Carbamazepine	100		P	40 - 150
Diuron	92.6		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	113		P	40 - 150
Hydrocodone	101		P	40 - 150
Ibuprofen	86.8		P	40 - 150
Imazapyr	96.4		P	40 - 150
Imidacloprid	100		P	40 - 150
Linuron	79.4		P	40 - 150
MCPP	106		P	40 - 150
Naproxen	91.5		P	40 - 150
Primidone	97.5		P	40 - 150
Pyraclostrobin	81.3		P	40 - 150
Triclopyr	51.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P363863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	116		P	40 - 150
Endothall	89.0		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	109		P	40 - 140
Sucralose	103		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P363787

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: P364261

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

Reference Method: SM 4500 F-C-97
Batch ID: P364266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P364107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085213	Barium	101		P	80 - 120
2085213	Calcium	104		P	80 - 120
2085213	Iron	109		P	80 - 120
2085213	Magnesium	103		P	80 - 120
2085213	Potassium	99.7		P	80 - 120
2085213	Sodium	101		P	80 - 120
2085213	Zinc	101		P	80 - 120
2085651	Barium	101	101	P/P	80 - 120
2085651	Calcium	107	107	P/P	80 - 120
2085651	Iron	106	105	P/P	80 - 120
2085651	Magnesium	111	110	P/P	80 - 120
2085651	Potassium	106	106	P/P	80 - 120
2085651	Sodium	103	104	P/P	80 - 120
2085651	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085213	Aluminum	99.9		P	80 - 120
2085213	Antimony	102		P	80 - 120
2085213	Arsenic	103		P	80 - 120
2085213	Boron	103		P	80 - 120
2085213	Cadmium	104		P	80 - 120
2085213	Chromium	99.9		P	80 - 120
2085213	Copper	99.4		P	80 - 120
2085213	Lead	97.0		P	80 - 120
2085213	Nickel	100		P	80 - 120
2085213	Selenium	101		P	80 - 120
2085213	Silver	101		P	80 - 120
2085213	Thallium	106		P	80 - 120
2085651	Aluminum	111	108	P/P	80 - 120
2085651	Antimony	110	107	P/P	80 - 120
2085651	Arsenic	111	109	P/P	80 - 120
2085651	Boron	116	114	P/P	80 - 120
2085651	Cadmium	113	111	P/P	80 - 120
2085651	Chromium	112	110	P/P	80 - 120
2085651	Copper	111	110	P/P	80 - 120
2085651	Lead	110	107	P/P	80 - 120
2085651	Nickel	112	110	P/P	80 - 120
2085651	Selenium	109	105	P/P	80 - 120
2085651	Silver	112	110	P/P	80 - 120
2085651	Thallium	120	116	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085618	Chloride	99.2		P	90 - 110
2085821	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P364030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085618	Sulfate	99.4		P	90 - 110
2085821	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P364151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085627	Ammonia-N	106	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P364233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085736	Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P364211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085598	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P364106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085802	Total-P	96.7	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P363796

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085628	O-Phosphate-P	96.0	98.0	P/P	90 - 110

Reference Method: EPA 8270E
 Batch ID: P364041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085692	Acetochlor	106	106	P/P	63 - 129
2085692	Alachlor	106	102	P/P	65 - 127
2085692	Ametryn	131	121	P/P	40 - 164
2085692	Atrazine Desethyl	84.4	73.1	P/P	14 - 157
2085692	Azinphos Methyl	112	140	P/P	49 - 180
2085692	Butylate	43.8	61.9	P/P	10 - 94.0
2085692	Chlorpyrifos Ethyl	109	105	P/P	58 - 123
2085692	Chlorpyrifos Methyl	101	98.1	P/P	58 - 125
2085692	Cyanazine	102	93.0	P/P	24 - 253
2085692	Demeton	67.5	77.7	P/P	25 - 149
2085692	Diazinon	97.9	98.7	P/P	59 - 144
2085692	Disulfoton	84.8	84.0	P/P	54 - 132
2085692	Dithiopyr	108	104	P/P	64 - 130
2085692	EPTC	45.2	64.7	P/P	10 - 92.0
2085692	Ethion	122	118	P/P	30 - 148

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P364041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085692	Ethoprop	91.8	92.5	P/P	50 - 130
2085692	Fenamiphos	107	99.7	P/P	49 - 142
2085692	Fipronil Desulfinyl	109	89.3	P/P	30 - 121
2085692	Fipronil Sulfide	116	138	P/F	31 - 136
2085692	Fipronil Sulfone	124	61.9	P/P	16 - 136
2085692	Fonofos	82.7	84.7	P/P	55 - 129
2085692	Hexazinone	195	156	F/F	56 - 141
2085692	Malathion	123	122	P/P	56 - 135
2085692	Metalaxyl	115	121	P/P	54 - 135
2085692	Metolachlor	109	112	P/P	51 - 140
2085692	Metribuzin	129	140	P/P	45 - 254
2085692	Mevinphos	82.7	85.3	P/P	33 - 131
2085692	Molinate	55.4	71.6	P/P	14 - 98.0
2085692	Oxadiazon	111	114	P/P	67 - 116
2085692	Parathion Ethyl	103	102	P/P	66 - 118
2085692	Parathion Methyl	110	101	P/P	64 - 136
2085692	Pendimethalin	101	101	P/P	59 - 144
2085692	Phorate	74.3	83.6	P/P	42 - 130
2085692	Prodiamine	122	124	P/P	42 - 148
2085692	Prometon	141	109	F/P	59 - 134
2085692	Prometryn	107	109	P/P	54 - 135
2085692	Simazine	113	114	P/P	53 - 156
2085692	Terbufos	87.6	88.8	P/P	57 - 131
2085692	Terbutylazine	111	114	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P363772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085322	2,4-D	128	116	P/P	40 - 150
2085322	Acetaminophen	107	92.3	P/P	30 - 150
2085322	Bentazon	116	101	P/P	30 - 150
2085322	Carbamazepine	109	97.4	P/P	40 - 150
2085322	Diuron	94.1	83.3	P/P	40 - 150
2085322	Fenuron	102	91.0	P/P	40 - 150
2085322	Fluridone	117	104	P/P	40 - 150
2085322	Hydrocodone	114	104	P/P	40 - 150
2085322	Ibuprofen	95.1	78.6	P/P	40 - 150
2085322	Imazapyr	137	127	P/P	40 - 150
2085322	Imidacloprid	156	139	F/P	40 - 150
2085322	Linuron	84.2	78.6	P/P	40 - 150
2085322	MCP	147	132	P/P	40 - 150
2085322	Naproxen	101	88.6	P/P	40 - 150
2085322	Primidone	98.9	83.7	P/P	40 - 150
2085322	Pyraclostrobin	98.9	87.8	P/P	40 - 150
2085322	Triclopyr	99.4	87.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P363863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085206	Acesulfame K	94.6	93.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P363863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085206	AMPA	62.3	64.7	P/P	40 - 150
2085206	Endothall	73.1	72.8	P/P	40 - 150
2085206	Glufosinate	89.2	90.0	P/P	40 - 150
2085206	Glyphosate	109	115	P/P	40 - 140
2085206	Sucralose	83.1	91.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P364266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085804	Fluoride	98.8	101	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P364107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085592	Organic Carbon	95.2	99.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085662	Turbidity	0.428	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085651	Barium	0.0602	Spike	P	0 - 20
2085651	Calcium	0.593	Spike	P	0 - 20
2085651	Iron	0.571	Spike	P	0 - 20
2085651	Magnesium	0.604	Spike	P	0 - 20
2085651	Potassium	0.566	Spike	P	0 - 20
2085651	Sodium	0.473	Spike	P	0 - 20
2085651	Zinc	0.163	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085651	Aluminum	2.12	Spike	P	0 - 20
2085651	Antimony	2.69	Spike	P	0 - 20
2085651	Arsenic	1.91	Spike	P	0 - 20
2085651	Boron	1.65	Spike	P	0 - 20
2085651	Cadmium	1.88	Spike	P	0 - 20
2085651	Chromium	1.70	Spike	P	0 - 20
2085651	Copper	0.900	Spike	P	0 - 20
2085651	Lead	3.23	Spike	P	0 - 20
2085651	Nickel	1.79	Spike	P	0 - 20
2085651	Selenium	4.15	Spike	P	0 - 20
2085651	Silver	1.65	Spike	P	0 - 20
2085651	Thallium	2.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085821	Chloride	10.4	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085821	Sulfate	9.43	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085627	Ammonia-N	0.0567	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085736	Kjeldahl Nitrogen	3.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085598	NO2NO3-N	1.94	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085802	Total-P	0.810	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085628	O-Phosphate-P	2.06	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P364041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085692	Acetochlor	0.556	Spike	P	0 - 30
2085692	Alachlor	3.43	Spike	P	0 - 30
2085692	Ametryn	8.09	Spike	P	0 - 30
2085692	Atrazine	0.990	Spike	P	0 - 30
2085692	Atrazine Desethyl	9.66	Spike	P	0 - 30
2085692	Azinphos Methyl	21.9	Spike	P	0 - 30
2085692	Bromacil	5.03	Spike	P	0 - 30
2085692	Butylate	34.3	Spike	F	0 - 30
2085692	Chlorpyrifos Ethyl	3.69	Spike	P	0 - 30
2085692	Chlorpyrifos Methyl	2.88	Spike	P	0 - 30
2085692	Cyanazine	9.77	Spike	P	0 - 30
2085692	Demeton	14.1	Spike	P	0 - 30
2085692	Diazinon	0.809	Spike	P	0 - 30
2085692	Dimethenamid	2.21	Spike	P	0 - 30
2085692	Disulfoton	0.982	Spike	P	0 - 30
2085692	Dithiopyr	2.90	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P364041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085692	EPTC	35.5	Spike	F	0 - 30
2085692	Ethion	3.09	Spike	P	0 - 30
2085692	Ethoprop	0.792	Spike	P	0 - 30
2085692	Fenamiphos	6.66	Spike	P	0 - 30
2085692	Fipronil	7.56	Spike	P	0 - 30
2085692	Fipronil Desulfinyl	12.4	Spike	P	0 - 30
2085692	Fipronil Sulfide	13.2	Spike	P	0 - 30
2085692	Fipronil Sulfone	31.1	Spike	F	0 - 30
2085692	Fonofos	2.39	Spike	P	0 - 30
2085692	Hexazinone	20.4	Spike	P	0 - 30
2085692	Malathion	1.27	Spike	P	0 - 30
2085692	Metaxyl	4.74	Spike	P	0 - 30
2085692	Metolachlor	2.63	Spike	P	0 - 30
2085692	Metribuzin	7.93	Spike	P	0 - 30
2085692	Mevinphos	3.20	Spike	P	0 - 30
2085692	Molinate	25.4	Spike	P	0 - 30
2085692	Norflurazon	11.6	Spike	P	0 - 30
2085692	Oxadiazon	2.61	Spike	P	0 - 30
2085692	Parathion Ethyl	0.999	Spike	P	0 - 30
2085692	Parathion Methyl	8.13	Spike	P	0 - 30
2085692	Pendimethalin	0.669	Spike	P	0 - 30
2085692	Phorate	11.8	Spike	P	0 - 30
2085692	Prodiamine	1.36	Spike	P	0 - 30
2085692	Prometon	22.7	Spike	P	0 - 30
2085692	Prometryn	1.18	Spike	P	0 - 30
2085692	Simazine	0.788	Spike	P	0 - 30
2085692	Tebuconazole	1.23	Spike	P	0 - 30
2085692	Terbufos	1.32	Spike	P	0 - 30
2085692	Terbutylazine	2.26	Spike	P	0 - 30
LFB	Acetochlor	0.608	LCS	P	0 - 30
LFB	Alachlor	0.648	LCS	P	0 - 30
LFB	Ametryn	40.5	LCS	F	0 - 30
LFB	Atrazine	2.63	LCS	P	0 - 30
LFB	Atrazine Desethyl	1.40	LCS	P	0 - 30
LFB	Azinphos Methyl	17.4	LCS	P	0 - 30
LFB	Bromacil	27.0	LCS	P	0 - 30
LFB	Butylate	8.52	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	4.56	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	3.38	LCS	P	0 - 30
LFB	Cyanazine	18.0	LCS	P	0 - 30
LFB	Demeton	9.99	LCS	P	0 - 30
LFB	Diazinon	1.82	LCS	P	0 - 30
LFB	Dimethenamid	4.81	LCS	P	0 - 30
LFB	Disulfoton	10.3	LCS	P	0 - 30
LFB	Dithiopyr	1.75	LCS	P	0 - 30
LFB	EPTC	8.06	LCS	P	0 - 30
LFB	Ethion	4.99	LCS	P	0 - 30
LFB	Ethoprop	2.36	LCS	P	0 - 30
LFB	Fenamiphos	99.9	LCS	F	0 - 30
LFB	Fipronil	7.92	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	5.59	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P364041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	3.68	LCS	P	0 - 30
LFB	Fipronil Sulfone	3.28	LCS	P	0 - 30
LFB	Fonofos	5.84	LCS	P	0 - 30
LFB	Hexazinone	63.0	LCS	F	0 - 30
LFB	Malathion	6.47	LCS	P	0 - 30
LFB	Metalaxyl	105	LCS	F	0 - 30
LFB	Metolachlor	1.02	LCS	P	0 - 30
LFB	Metribuzin	10.6	LCS	P	0 - 30
LFB	Mevinphos	35.5	LCS	F	0 - 30
LFB	Molinate	5.86	LCS	P	0 - 30
LFB	Norflurazon	30.3	LCS	F	0 - 30
LFB	Oxadiazon	0.825	LCS	P	0 - 30
LFB	Parathion Ethyl	4.17	LCS	P	0 - 30
LFB	Parathion Methyl	4.20	LCS	P	0 - 30
LFB	Pendimethalin	5.30	LCS	P	0 - 30
LFB	Phorate	4.63	LCS	P	0 - 30
LFB	Prodiamine	1.28	LCS	P	0 - 30
LFB	Prometon	79.6	LCS	F	0 - 30
LFB	Prometryn	9.43	LCS	P	0 - 30
LFB	Simazine	4.24	LCS	P	0 - 30
LFB	Tebuconazole	40.2	LCS	F	0 - 30
LFB	Terbufos	0.979	LCS	P	0 - 30
LFB	Terbuthylazine	0.633	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P363772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085322	2,4-D	9.74	Spike	P	0 - 30
2085322	Acetaminophen	15.1	Spike	P	0 - 30
2085322	Bentazon	13.2	Spike	P	0 - 30
2085322	Carbamazepine	11.2	Spike	P	0 - 30
2085322	Diuron	11.6	Spike	P	0 - 30
2085322	Fenuron	11.8	Spike	P	0 - 30
2085322	Fluridone	10.7	Spike	P	0 - 30
2085322	Hydrocodone	8.63	Spike	P	0 - 30
2085322	Ibuprofen	19.0	Spike	P	0 - 30
2085322	Imazapyr	7.25	Spike	P	0 - 30
2085322	Imidacloprid	11.2	Spike	P	0 - 30
2085322	Linuron	6.88	Spike	P	0 - 30
2085322	MCP	10.4	Spike	P	0 - 30
2085322	Naproxen	12.8	Spike	P	0 - 30
2085322	Primidone	16.6	Spike	P	0 - 30
2085322	Pyraclostrobin	11.9	Spike	P	0 - 30
2085322	Triclopyr	13.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P363863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085206	Acesulfame K	1.09	Spike	P	0 - 30
2085206	AMPA	2.87	Spike	P	0 - 30
2085206	Endothall	0.442	Spike	P	0 - 30
2085206	Glufosinate	0.901	Spike	P	0 - 30
2085206	Glyphosate	3.88	Spike	P	0 - 30
2085206	Sucralose	9.19	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P363787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085597	Color (true)	0.443	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P364261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085804	Total Alkalinity	0.262	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P364271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085681	TDS	0.322	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P364266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085804	Fluoride	1.41	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P364107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085592	Organic Carbon	2.29	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: 2085690
Field Sample ID: G2SW0116

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.4	P	30 - 160
EPA 8321B	Diuron-d6	81.1	P	30 - 160
EPA 8321B	Endothall-d6	78.4	P	30 - 160
EPA 8321B	Endothall-d6	78.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Ibuprofen-d3	95.2	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	45.5	P	30 - 160
EPA 8321B	Sucralose-d6	45.5	P	30 - 160

Lab Sample ID: 2085692
Field Sample ID: G2SW0116

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	111	P	68 - 130
EPA 8270E	Terbufos-d10	81.2	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A91358
Included Lab Sample IDs: 2085681

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A91361
Included Lab Sample IDs: 2085681

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A91362
Included Lab Sample IDs: 2085683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	96.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91404
Included Lab Sample IDs: 2085681

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

Reference Method: EPA 8321B
Run ID: A91439
Included Lab Sample IDs: 2085690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	70.8	89.1	P/P	60 - 160
Endothall	109	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A91442
Included Lab Sample IDs: 2085690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	86.3	110	P/P	60 - 160
Glufosinate	91.2	99.8	P/P	60 - 160
Glyphosate	90.1	104	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A91471
Included Lab Sample IDs: 2085682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	96.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91484

Included Lab Sample IDs: 2085691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.8	99.1	P/P	90 - 110
Calcium	101	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	100	99.6	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91506

Included Lab Sample IDs: 2085682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91524

Included Lab Sample IDs: 2085690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.2	95.0	P/P	50 - 150
Acetaminophen	110	109	P/P	60 - 160
Bentazon	109	112	P/P	50 - 160
Carbamazepine	102	101	P/P	60 - 150
Diuron	104	107	P/P	60 - 150
Fenuron	100	103	P/P	60 - 150
Fluridone	107	112	P/P	60 - 160
Hydrocodone	96.7	99.7	P/P	60 - 150
Ibuprofen	112	113	P/P	50 - 160
Imazapyr	98.3	101	P/P	50 - 150
Imidacloprid	96.5	94.8	P/P	60 - 150
Linuron	105	100	P/P	60 - 150
MCPP	106	111	P/P	50 - 150
Naproxen	109	105	P/P	50 - 160
Primidone	99.0	98.9	P/P	60 - 150
Pyraclostrobin	104	102	P/P	60 - 150
Triclopyr	110	106	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91529

Included Lab Sample IDs: 2085682

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91542

Included Lab Sample IDs: 2085691

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91542

Included Lab Sample IDs: 2085691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	96.2	96.7	P/P	90 - 110
Arsenic	99.4	100	P/P	90 - 110
Boron	106	106	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	100	102	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	98.6	99.1	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Selenium	99.6	99.5	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91544

Included Lab Sample IDs: 2085681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91544

Included Lab Sample IDs: 2085681

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91552

Included Lab Sample IDs: 2085682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91560

Included Lab Sample IDs: 2085682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91628

Included Lab Sample IDs: 2085690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.1	95.9	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A91747
Included Lab Sample IDs: 2085692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	98.2		P	80 - 120
Alachlor	101		P	80 - 120
Ametryn	95.3		P	80 - 120
Atrazine Desethyl	100		P	80 - 120
Azinphos Methyl	87.3		P	80 - 120
Bromacil	95.9		P	80 - 120
Butylate	93.6		P	80 - 120
Chlorpyrifos Ethyl	96.3		P	80 - 120
Chlorpyrifos Methyl	101		P	80 - 120
Cyanazine	89.6		P	80 - 120
Demeton	98.8		P	80 - 120
Diazinon	97.6		P	80 - 120
Dimethenamid	97.5		P	80 - 120
Disulfoton	97.2		P	80 - 120
Dithiopyr	97.8		P	80 - 120
EPTC	98.9		P	80 - 120
Ethion	97.9		P	80 - 120
Ethoprop	99.0		P	80 - 120
Fenamiphos	101		P	80 - 120
Fipronil	96.8		P	80 - 120
Fipronil Desulfinyl	104		P	80 - 120
Fipronil Sulfide	97.7		P	80 - 120
Fipronil Sulfone	99.9		P	80 - 120
Fonofos	98.1		P	80 - 120
Hexazinone	99.3		P	80 - 120
Malathion	91.5		P	80 - 120
Metaxyl	99.7		P	80 - 120
Metolachlor	103		P	80 - 120
Metribuzin	98.6		P	80 - 120
Mevinphos	99.6		P	80 - 120
Molinate	97.7		P	80 - 120
Norflurazon	95.5		P	80 - 120
Oxadiazon	101		P	80 - 120
Parathion Ethyl	96.3		P	80 - 120
Parathion Methyl	92.8		P	80 - 120
Pendimethalin	89.0		P	80 - 120
Phorate	95.2		P	80 - 120
Prodiamine	84.5		P	80 - 120
Prometon	96.3		P	80 - 120
Prometryn	98.5		P	80 - 120
Simazine	98.5		P	80 - 120
Tebuconazole	98.6		P	80 - 120
Terbufos	96.8		P	80 - 120
Terbutylazine	101		P	80 - 120

Reference Method: EPA 8270E
Run ID: A91750
Included Lab Sample IDs: 2085692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Atrazine	98.1		P	80 - 120

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							0.428	
EPA 200.7 Rev. 4.4	Barium	101		101	101	101			0.0602
	Calcium	109		104	107	107			0.593
	Iron	106		109	106	105			0.571
	Magnesium	113		103	111	110			0.604
	Potassium	102		99.7	106	106			0.566
	Sodium	102		101	103	104			0.473
	Zinc	100		101	101	101			0.163
EPA 200.8 Rev. 5.4	Aluminum	101		99.9	111	108			2.12
	Antimony	101		102	110	107			2.69
	Arsenic	105		103	111	109			1.91
	Boron	101		103	116	114			1.65
	Cadmium	104		104	113	111			1.88
	Chromium	101		99.9	112	110			1.70
	Copper	104		99.4	111	110			0.900
	Lead	93.9		97.0	110	107			3.23
	Nickel	104		100	112	110			1.79
	Selenium	104		101	109	105			4.15
	Silver	103		101	112	110			1.65
	Thallium	101		106	120	116			2.80
EPA 300.0 Rev. 2.1	Chloride	99.3		101	99.2			10.4	
	Sulfate	100		100	99.4			9.43	
EPA 350.1 Rev. 2.0	Ammonia-N	103		106	106				0.0567
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108		103	108				3.89
EPA 353.2 Rev. 2.0	NO2NO3-N	100		102	100				1.94
EPA 365.1 Rev. 2.0	Total-P	95.6		96.7	95.9				0.810
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4		96.0	98.0				2.06
EPA 8270E	Acetochlor	108	107	106	106		0.608		0.556
	Alachlor	108	107	102	106		0.648		3.43
	Ametryn	76.8	116	131	121		40.5		8.09
	Atrazine	116	119				2.63		0.990
	Atrazine Desethyl	61.5	60.6	84.4	73.1		1.40		9.66
	Azinphos Methyl	96.2	115	112	140		17.4		21.9
	Bromacil	48.5	63.7				27.0		5.03
	Butylate	69.7	75.9	43.8	61.9		8.52		34.3
	Chlorpyrifos Ethyl	98.5	103	109	105		4.56		3.69
	Chlorpyrifos Methyl	89.6	92.6	98.1	101		3.38		2.88
	Cyanazine	74.3	62.0	93.0	102		18.0		9.77
	Demeton	54.4	49.2	77.7	67.5		9.99		14.1
	Diazinon	99.9	98.1	98.7	97.9		1.82		0.809
	Dimethenamid	116	110				4.81		2.21
	Disulfoton	63.4	57.1	84.0	84.8		10.3		0.982
	Dithiopyr	107	105	104	108		1.75		2.90
	EPTC	66.5	72.1	64.7	45.2		8.06		35.5
	Ethion	115	121	118	122		4.99		3.09
	Ethoprop	106	109	92.5	91.8		2.36		0.792
	Fenamiphos	11.1	33.3	99.7	107		99.9		6.66
	Fipronil	97.5	106				7.92		7.56
	Fipronil Desulfinyl	105	111	89.3	109		5.59		12.4
	Fipronil Sulfide	113	117	138	116		3.68		13.2
	Fipronil Sulfone	111	115	61.9	124		3.28		31.1
	Fonofos	79.3	84.1	84.7	82.7		5.84		2.39
	Hexazinone	66.4	127	156	195		63.0		20.4
	Malathion	106	114	122	123		6.47		1.27

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2085681

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	2085691
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2085691
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2085681
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2085681
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2085682
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2085682
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2085682
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2085682
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2085683
EPA 8270E / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2085692
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2085690
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2085690
SM 2120 B / E31780	True Color measured at 450 nm	2085681
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2085681
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2085681
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2085681
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2085681
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2085682

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	05/10/2019			05/10/2019 15:52	Sima Feizi	2085681
EPA 200.7 Rev. 4.4	05/10/2019	05/14/2019 13:50	Elliott D. Healy	05/15/2019 17:40	Betina Topolski	2085691
EPA 200.8 Rev. 5.4	05/10/2019	05/14/2019 13:50	Elliott D. Healy	05/20/2019 18:43	Robert K Palmer	2085691
EPA 300.0 Rev. 2.1	05/10/2019			05/15/2019 22:44	Lipi Saha	2085681
EPA 350.1 Rev. 2.0	05/10/2019			05/16/2019 11:44	Ping Hua	2085682
EPA 351.2 Rev. 2.0	05/10/2019	05/20/2019 11:40	Jhamieka S. Greenwood	05/21/2019 11:32	Joseph Suarez	2085682
EPA 353.2 Rev. 2.0	05/10/2019			05/20/2019 12:14	Beverly Y. Sanders	2085682
EPA 365.1 Rev. 2.0	05/10/2019	05/17/2019 09:23	Adrian Shelby	05/20/2019 15:57	Rosalyn Ballman	2085682
EPA 365.1 Rev. 2.0 dissolved	05/10/2019			05/10/2019 15:22	Jhamieka S. Greenwood	2085683
EPA 8270E	05/10/2019	05/15/2019 09:00	Julie Wi	05/16/2019 16:37	Vandana T. Nagar	2085692
	05/10/2019	05/15/2019 09:00	Julie Wi	05/17/2019 13:52	Vandana T. Nagar	2085692
EPA 8321B	05/10/2019	05/13/2019 09:00	Hoor Shaik	05/18/2019 19:54	Juyoung Kim	2085690
	05/10/2019	05/14/2019 09:30	Rebecca Ware	05/14/2019 13:28	Rebecca Ware	2085690
	05/10/2019	05/14/2019 09:30	Rebecca Ware	05/14/2019 18:02	Rebecca Ware	2085690
	05/10/2019	05/14/2019 09:30	Rebecca Ware	05/23/2019 13:34	Rebecca Ware	2085690
SM 2120 B	05/10/2019			05/10/2019 15:18	Blanca Fach	2085681
SM 2320 B-97	05/10/2019			05/18/2019 18:18	Dale L. Simmons	2085681
SM 2540 C-97	05/10/2019			05/14/2019 14:06	Yijie Li	2085681
SM 2540 D-97	05/10/2019			05/14/2019 14:06	Yijie Li	2085681
SM 4500 F-C-97	05/10/2019			05/18/2019 18:18	Dale L. Simmons	2085681
SM 5310 B-00	05/10/2019			05/16/2019 05:21	Julia Storbeck	2085682