Chemical Analysis Report

WAS-SECT-2019-06-19-01

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

Event Description: **SCI 8**
Request ID: **RQ-2019-06-17-13**
Customer: **WAS-SECT**
Project ID: **SMP**

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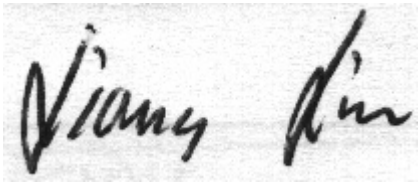
Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-JUL-2019 10:42



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: BRIDGE CREEK AT SR 71 **Collection Date/Time: 06/19/2019 11:39**

Field ID: G2WA0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2096906	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P366046	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P366270	
		Sulfate	0.88		mg SO4/L	P366272	
	SM 2120 B	Color (true)	63		PCU	P366086	
	SM 2320 B-97	Total Alkalinity	73		mg CaCO3/L	P366157	
	SM 2540 C-97	TDS	98	A	mg/L	P366544	
	SM 2540 D-97	TSS	17	A	mg/L	P366530	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P366161	
2096907	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P366278	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P366267	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P366227	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P366177	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P366238	
2096908	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365967	
2096912	EPA 8321B	2,4-D	0.0020	U	ug/L	P365948	
		Acesulfame K**	0.10	U	ug/L	P365987	
		AMPA**	0.10	U	ug/L	P365987	MS
		Sucralose**	0.019	I	ug/L	P365987	
		Acetaminophen**	0.0080	U	ug/L	P365948	
		Endothall**	0.25	U	ug/L	P365987	
		Glufosinate**	0.10	U	ug/L	P365987	MS
		Glyphosate**	0.10	U	ug/L	P365987	MS
		Bentazon	8.0E-04	U	ug/L	P365948	
		Carbamazepine**	8.0E-04	U	ug/L	P365948	
		Diuron	0.0020	U	ug/L	P365948	
		Fenuron	0.016	U	ug/L	P365948	
		Fluridone**	8.0E-04	U	ug/L	P365948	
		Imazapyr**	0.019		ug/L	P365948	
		Hydrocodone**	0.0020	U	ug/L	P365948	
		Ibuprofen**	0.020	U	ug/L	P365948	
		Imidacloprid	0.0020	U	ug/L	P365948	MS
		Linuron	0.0040	U	ug/L	P365948	
		MCPP	0.0020	UJ	ug/L	P365948	LCS, MS
		Naproxen**	0.0080	U	ug/L	P365948	
		Primidone**	0.0040	U	ug/L	P365948	
		Pyraclostrobin**	0.0020	U	ug/L	P365948	
		Triclopyr**	0.0040	U	ug/L	P365948	MS
2096913	EPA 200.7 Rev. 4.4	Barium	16.8		ug/L	P366035	
		Calcium	18.2		mg/L	P366035	
		Iron	1.06E+03		ug/L	P366035	
		Magnesium	8.35		mg/L	P366035	
		Potassium	0.68	I	mg/L	P366035	
		Sodium	2.4		mg/L	P366035	

Field ID: G2WA0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2096913	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P366035	
	EPA 200.8 Rev. 5.4	Aluminum	450		ug/L	P366035	
		Antimony	0.050	U	ug/L	P366035	
		Arsenic	0.52		ug/L	P366035	
		Boron**	12.1		ug/L	P366035	
		Cadmium	0.020	I	ug/L	P366035	
		Chromium	0.65	I	ug/L	P366035	
		Copper	0.40	U	ug/L	P366035	
		Lead	0.60		ug/L	P366035	
		Nickel	0.50	U	ug/L	P366035	
		Selenium	0.20	U	ug/L	P366035	
		Silver	0.010	U	ug/L	P366035	
		Thallium	0.10	U	ug/L	P366035	
2096914	EPA 8270E	Acetochlor	0.77	I	ng/L	P365996	
		Alachlor	0.26	U	ng/L	P365996	
		Ametryn	0.63	U	ng/L	P365996	
		Atrazine	0.35	I	ng/L	P365996	
		Atrazine Desethyl	1.6	U	ng/L	P365996	
		Azinphos Methyl	5.2	U	ng/L	P365996	
		Bromacil	0.52	U	ng/L	P365996	
		Butylate	0.42	UJ	ng/L	P365996	LCS
		Chlorpyrifos Ethyl	0.26	U	ng/L	P365996	
		Chlorpyrifos Methyl	0.10	U	ng/L	P365996	
		Cyanazine	3.4	U	ng/L	P365996	
		Demeton	7.3	U	ng/L	P365996	
		Diazinon	0.13	U	ng/L	P365996	
		Dimethenamid**	0.10	U	ng/L	P365996	
		Disulfoton	0.52	U	ng/L	P365996	
		Dithiopyr**	0.10	U	ng/L	P365996	
		EPTC	1.3	UJ	ng/L	P365996	LCS
		Ethion	0.16	U	ng/L	P365996	
		Ethoprop	0.10	U	ng/L	P365996	
		Fenamiphos	0.52	UJ	ng/L	P365996	LCS, RPD
		Fipronil	0.26	U	ng/L	P365996	
		Fipronil Desulfinyl**	0.13	U	ng/L	P365996	
		Fipronil Sulfide	0.16	U	ng/L	P365996	
		Fipronil Sulfone	0.16	U	ng/L	P365996	
		Fonofos	0.21	U	ng/L	P365996	
		Hexazinone	4.4		ng/L	P365996	
		Malathion	0.37	U	ng/L	P365996	
		Metalaxyl	0.31	UJ	ng/L	P365996	LCS, MS, RPD
		Metolachlor	2.2		ng/L	P365996	
		Metribuzin	0.78	U	ng/L	P365996	
		Mevinphos	0.52	U	ng/L	P365996	

Field ID: G2WA0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2096914	EPA 8270E	Molinate	0.31	UJ	ng/L	P365996	LCS
		Norflurazon	0.52	U	ng/L	P365996	
		Oxadiazon**	0.10	U	ng/L	P365996	
		Parathion Ethyl	0.26	U	ng/L	P365996	
		Parathion Methyl	0.58	U	ng/L	P365996	
		Pendimethalin	1.0	U	ng/L	P365996	
		Phorate	0.26	U	ng/L	P365996	
		Prodiamine**	0.18	U	ng/L	P365996	
		Prometon	0.94	U	ng/L	P365996	
		Prometryn	0.21	U	ng/L	P365996	
		Simazine	0.52	U	ng/L	P365996	
		Tebuconazole**	0.52	U	ng/L	P365996	
		Terbufos	0.10	U	ng/L	P365996	
		Terbuthylazine	0.44	U	ng/L	P365996	

Ref. Method and Comment:
EPA 8321B: Refer to the narrative for an explanation of QC Codes.
EPA 8270E: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366046

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

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: P366035

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: P366270

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366272

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366278

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: P366267

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366227

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366177

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365967

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

Reference Method: EPA 8270E
Batch ID: P365996

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	5.0	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	7.0	U	ng/L
Diazinon	0.12	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.30	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P365996

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
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P365948

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: P365987

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: P366086

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366157

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

Reference Method: SM 2540 C-97
Batch ID: P366544

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366530

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366161

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366238

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: P366035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	99.8		P	85 - 115
Iron	104		P	85 - 115
Magnesium	99.2		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	97.9		P	85 - 115
Zinc	97.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.1		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	101		P	85 - 115
Boron	100		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	96.0		P	85 - 115
Copper	92.3		P	85 - 115
Lead	98.0		P	85 - 115
Nickel	99.3		P	85 - 115
Selenium	101		P	85 - 115
Silver	98.5		P	85 - 115
Thallium	99.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366270

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366278

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: P366267

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366227

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366177

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.7		P	90 - 110

Reference Method: EPA 8270E
Batch ID: P365996

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	120	114	P/P	69 - 122
Alachlor	115	111	P/P	71 - 120
Ametryn	101	96.5	P/P	47 - 138
Atrazine	114	103	P/P	74 - 124
Atrazine Desethyl	78.1	70.8	P/P	38 - 138
Azinphos Methyl	109	94.5	P/P	69 - 154
Bromacil	96.2	91.6	P/P	39 - 121
Butylate	93.6	84.3	F/P	27 - 87.0
Chlorpyrifos Ethyl	113	103	P/P	69 - 118
Chlorpyrifos Methyl	108	99.5	P/P	70 - 120
Cyanazine	158	137	P/P	20 - 250
Demeton	87.2	65.5	P/P	39 - 118
Diazinon	115	110	P/P	68 - 127
Dimethenamid	115	113	P/P	66 - 125
Disulfoton	78.6	74.3	P/P	52 - 126
Dithiopyr	115	114	P/P	67 - 127
EPTC	91.4	82.3	F/P	24 - 88.0
Ethion	108	103	P/P	51 - 132
Ethoprop	106	99.5	P/P	58 - 117
Fenamiphos	54.4	36.5	P/F	38 - 139
Fipronil	108	108	P/P	61 - 124
Fipronil Desulfinyl	102	99.5	P/P	47 - 120
Fipronil Sulfide	104	102	P/P	56 - 119
Fipronil Sulfone	105	102	P/P	50 - 117
Fonofos	98.8	95.1	P/P	60 - 121
Hexazinone	114	86.0	P/P	55 - 137
Malathion	112	105	P/P	66 - 126
Metalaxyl	38.8	27.9	P/F	33 - 140
Metolachlor	113	110	P/P	69 - 119
Metribuzin	116	104	P/P	31 - 238
Mevinphos	88.3	82.4	P/P	42 - 113
Molinate	100	90.1	F/P	32 - 96.0
Norflurazon	107	100	P/P	54 - 123
Oxadiazon	107	103	P/P	63 - 128

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P365996

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	95.7	96.4	P/P	72 - 111
Parathion Methyl	99.3	91.9	P/P	74 - 126
Pendimethalin	103	96.0	P/P	61 - 131
Phorate	92.2	80.2	P/P	51 - 115
Prodiamine	101	99.7	P/P	38 - 144
Prometon	94.9	78.2	P/P	54 - 119
Prometryn	88.1	95.3	P/P	63 - 120
Simazine	106	101	P/P	75 - 126
Tebuconazole	89.7	91.3	P/P	20 - 119
Terbufos	102	92.1	P/P	64 - 116
Terbuthylazine	111	105	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P365948

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Acetaminophen	125		P	30 - 150
Bentazon	87.9		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	94.7		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	112		P	40 - 150
Hydrocodone	100		P	40 - 150
Ibuprofen	71.7		P	30 - 150
Imazapyr	72.3		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	71.0		P	40 - 150
MCPP	151		F	40 - 150
Naproxen	102		P	40 - 150
Primidone	93.2		P	40 - 150
Pyraclostrobin	85.9		P	30 - 150
Triclopyr	98.5		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P365987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	101		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	98.5		P	40 - 150
Glyphosate	100		P	40 - 140
Sucralose	94.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P366086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.7		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P366157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096576	Barium	100	98.9	P/P	80 - 120
2096576	Calcium	96.6		P	80 - 120
2096576	Iron	105	104	P/P	80 - 120
2096576	Magnesium	100		P	80 - 120
2096576	Potassium	97.0		P	80 - 120
2096576	Sodium	95.6		P	80 - 120
2096576	Zinc	101	99.8	P/P	80 - 120
2096714	Barium	99.5		P	80 - 120
2096714	Calcium	99.6		P	80 - 120
2096714	Iron	103		P	80 - 120
2096714	Magnesium	102		P	80 - 120
2096714	Potassium	98.3		P	80 - 120
2096714	Sodium	98.7		P	80 - 120
2096714	Zinc	99.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096576	Aluminum	101	100	P/P	80 - 120
2096576	Antimony	102	103	P/P	80 - 120
2096576	Arsenic	105	106	P/P	80 - 120
2096576	Boron	103	104	P/P	80 - 120
2096576	Cadmium	102	103	P/P	80 - 120
2096576	Chromium	97.6	98.5	P/P	80 - 120
2096576	Copper	94.2	94.9	P/P	80 - 120
2096576	Lead	101	101	P/P	80 - 120
2096576	Nickel	99.6	101	P/P	80 - 120
2096576	Selenium	102	102	P/P	80 - 120
2096576	Silver	98.0	99.9	P/P	80 - 120
2096576	Thallium	104	104	P/P	80 - 120
2096714	Aluminum	100		P	80 - 120
2096714	Antimony	103		P	80 - 120
2096714	Arsenic	105		P	80 - 120
2096714	Boron	102		P	80 - 120
2096714	Cadmium	103		P	80 - 120
2096714	Chromium	99.1		P	80 - 120
2096714	Copper	95.8		P	80 - 120
2096714	Lead	102		P	80 - 120
2096714	Nickel	101		P	80 - 120
2096714	Selenium	103		P	80 - 120
2096714	Silver	100		P	80 - 120
2096714	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096906	Chloride	102	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096906	Sulfate	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096921	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096745	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096752	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096733	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096734	O-Phosphate-P	95.9	97.0	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P365996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096765	Acetochlor	112	109	P/P	63 - 129
2096765	Alachlor	112	109	P/P	65 - 127
2096765	Ametryn	106	104	P/P	40 - 164
2096765	Atrazine	112	109	P/P	66 - 135
2096765	Atrazine Desethyl	77.6	79.4	P/P	14 - 157
2096765	Azinphos Methyl	96.1	99.3	P/P	49 - 180
2096765	Bromacil	96.2	94.9	P/P	48 - 130
2096765	Butylate	84.5	74.9	P/P	10 - 94.0
2096765	Chlorpyrifos Ethyl	113	106	P/P	58 - 123
2096765	Chlorpyrifos Methyl	103	100	P/P	58 - 125
2096765	Cyanazine	165	127	P/P	24 - 253
2096765	Demeton	70.9	69.0	P/P	25 - 149
2096765	Diazinon	109	109	P/P	59 - 144
2096765	Dimethenamid	109	108	P/P	46 - 139
2096765	Disulfoton	85.6	78.3	P/P	54 - 132
2096765	Dithiopyr	110	109	P/P	64 - 130

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P365996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096765	EPTC	75.7	79.5	P/P	10 - 92.0
2096765	Ethion	109	99.6	P/P	30 - 148
2096765	Ethoprop	103	96.2	P/P	50 - 130
2096765	Fenamiphos	75.5	80.4	P/P	49 - 142
2096765	Fipronil	105	103	P/P	46 - 140
2096765	Fipronil Desulfinyl	100	96.5	P/P	30 - 121
2096765	Fipronil Sulfide	105	94.8	P/P	31 - 136
2096765	Fipronil Sulfone	107	97.1	P/P	16 - 136
2096765	Fonofos	96.0	92.4	P/P	55 - 129
2096765	Hexazinone	133	140	P/P	56 - 141
2096765	Malathion	110	103	P/P	56 - 135
2096765	Metalaxyl	45.9	72.6	F/P	54 - 135
2096765	Metolachlor	108	108	P/P	51 - 140
2096765	Metribuzin	123	126	P/P	45 - 254
2096765	Mevinphos	80.6	85.4	P/P	33 - 131
2096765	Molinate	85.4	88.7	P/P	14 - 98.0
2096765	Norflurazon	102	100	P/P	34 - 136
2096765	Oxadiazon	105	102	P/P	67 - 116
2096765	Parathion Ethyl	94.3	93.6	P/P	66 - 118
2096765	Parathion Methyl	89.6	94.0	P/P	64 - 136
2096765	Pendimethalin	101	93.8	P/P	59 - 144
2096765	Phorate	78.5	82.8	P/P	42 - 130
2096765	Prodiamine	109	100	P/P	42 - 148
2096765	Prometon	77.0	98.8	P/P	59 - 134
2096765	Prometryn	99.0	95.1	P/P	54 - 135
2096765	Simazine	103	107	P/P	53 - 156
2096765	Tebuconazole	85.7	97.7	P/P	10 - 131
2096765	Terbufos	98.1	92.1	P/P	57 - 131
2096765	Terbuthylazine	109	104	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P365948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096571	2,4-D	93.1	117	P/P	40 - 150
2096571	Acetaminophen	98.9	101	P/P	30 - 150
2096571	Bentazon	45.8	94.5	P/P	30 - 150
2096571	Carbamazepine	72.2	80.2	P/P	40 - 150
2096571	Diuron	63.8	71.6	P/P	40 - 150
2096571	Fenuron	78.3	87.3	P/P	40 - 150
2096571	Fluridone	70.0	81.4	P/P	40 - 150
2096571	Hydrocodone	96.0	101	P/P	40 - 150
2096571	Ibuprofen	63.0	70.3	P/P	30 - 150
2096571	Imazapyr	97.5	115	P/P	40 - 150
2096571	Imidacloprid	136	164	P/F	40 - 150
2096571	Linuron	60.7	59.7	P/P	40 - 150
2096571	MCPP	144	176	P/F	40 - 150
2096571	Naproxen	62.1	55.0	P/P	40 - 150
2096571	Primidone	77.4	78.5	P/P	40 - 150
2096571	Pyraclostrobin	87.1	90.1	P/P	30 - 150
2096571	Triclopyr	130	154	P/F	30 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P365987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096084	Acesulfame K	83.1	82.1	P/P	40 - 150
2096084	AMPA	18.2	28.7	F/F	40 - 150
2096084	Endothall	77.0	74.5	P/P	40 - 150
2096084	Glufosinate	39.1	39.5	F/F	40 - 150
2096084	Glyphosate	14.7	32.0	F/F	40 - 140
2096084	Sucralose	52.8	50.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P366161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096415	Fluoride	97.8	97.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096907	Organic Carbon	94.8	95.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096920	Turbidity	3.53	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096576	Barium	1.21	Spike	P	0 - 20
2096576	Calcium	0.861	Spike	P	0 - 20
2096576	Iron	1.09	Spike	P	0 - 20
2096576	Magnesium	0.671	Spike	P	0 - 20
2096576	Potassium	1.00	Spike	P	0 - 20
2096576	Sodium	1.05	Spike	P	0 - 20
2096576	Zinc	1.23	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096576	Aluminum	0.473	Spike	P	0 - 20
2096576	Antimony	0.545	Spike	P	0 - 20
2096576	Arsenic	1.06	Spike	P	0 - 20
2096576	Boron	0.126	Spike	P	0 - 20
2096576	Cadmium	0.889	Spike	P	0 - 20
2096576	Chromium	0.865	Spike	P	0 - 20
2096576	Copper	0.711	Spike	P	0 - 20
2096576	Lead	0.259	Spike	P	0 - 20
2096576	Nickel	1.35	Spike	P	0 - 20
2096576	Selenium	0.184	Spike	P	0 - 20
2096576	Silver	1.94	Spike	P	0 - 20
2096576	Thallium	0.0504	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096906	Chloride	1.43	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096906	Sulfate	0.946	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096921	Ammonia-N	0.178	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096745	Kjeldahl Nitrogen	0.731	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096752	NO2NO3-N	1.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096733	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096734	O-Phosphate-P	1.14	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P365996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096765	Acetochlor	2.81	Spike	P	0 - 30
2096765	Alachlor	2.11	Spike	P	0 - 30
2096765	Ametryn	1.65	Spike	P	0 - 30
2096765	Atrazine	3.05	Spike	P	0 - 30
2096765	Atrazine Desethyl	2.35	Spike	P	0 - 30
2096765	Azinphos Methyl	3.26	Spike	P	0 - 30
2096765	Bromacil	1.20	Spike	P	0 - 30
2096765	Butylate	12.0	Spike	P	0 - 30
2096765	Chlorpyrifos Ethyl	6.82	Spike	P	0 - 30
2096765	Chlorpyrifos Methyl	2.39	Spike	P	0 - 30
2096765	Cyanazine	25.8	Spike	P	0 - 30
2096765	Demeton	2.69	Spike	P	0 - 30
2096765	Diazinon	0.0929	Spike	P	0 - 30
2096765	Dimethenamid	1.30	Spike	P	0 - 30
2096765	Disulfoton	8.91	Spike	P	0 - 30
2096765	Dithiopyr	1.28	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P365996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096765	EPTC	4.88	Spike	P	0 - 30
2096765	Ethion	9.27	Spike	P	0 - 30
2096765	Ethoprop	6.55	Spike	P	0 - 30
2096765	Fenamiphos	6.38	Spike	P	0 - 30
2096765	Fipronil	1.44	Spike	P	0 - 30
2096765	Fipronil Desulfinyl	3.57	Spike	P	0 - 30
2096765	Fipronil Sulfide	10.4	Spike	P	0 - 30
2096765	Fipronil Sulfone	9.64	Spike	P	0 - 30
2096765	Fonofos	3.75	Spike	P	0 - 30
2096765	Hexazinone	4.52	Spike	P	0 - 30
2096765	Malathion	7.03	Spike	P	0 - 30
2096765	Metalaxyl	45.0	Spike	F	0 - 30
2096765	Metolachlor	0.0794	Spike	P	0 - 30
2096765	Metribuzin	2.30	Spike	P	0 - 30
2096765	Mevinphos	5.82	Spike	P	0 - 30
2096765	Molinate	3.78	Spike	P	0 - 30
2096765	Norflurazon	2.00	Spike	P	0 - 30
2096765	Oxadiazon	2.95	Spike	P	0 - 30
2096765	Parathion Ethyl	0.776	Spike	P	0 - 30
2096765	Parathion Methyl	4.72	Spike	P	0 - 30
2096765	Pendimethalin	7.00	Spike	P	0 - 30
2096765	Phorate	5.34	Spike	P	0 - 30
2096765	Prodiamine	8.20	Spike	P	0 - 30
2096765	Prometon	24.8	Spike	P	0 - 30
2096765	Prometryn	4.07	Spike	P	0 - 30
2096765	Simazine	4.24	Spike	P	0 - 30
2096765	Tebuconazole	13.1	Spike	P	0 - 30
2096765	Terbufos	6.32	Spike	P	0 - 30
2096765	Terbuthylazine	4.84	Spike	P	0 - 30
LFB	Acetochlor	5.09	LCS	P	0 - 30
LFB	Alachlor	2.81	LCS	P	0 - 30
LFB	Ametryn	4.32	LCS	P	0 - 30
LFB	Atrazine	10.3	LCS	P	0 - 30
LFB	Atrazine Desethyl	9.78	LCS	P	0 - 30
LFB	Azinphos Methyl	14.1	LCS	P	0 - 30
LFB	Bromacil	4.92	LCS	P	0 - 30
LFB	Butylate	10.5	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	9.88	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	7.97	LCS	P	0 - 30
LFB	Cyanazine	14.0	LCS	P	0 - 30
LFB	Demeton	28.5	LCS	P	0 - 30
LFB	Diazinon	5.29	LCS	P	0 - 30
LFB	Dimethenamid	2.09	LCS	P	0 - 30
LFB	Disulfoton	5.59	LCS	P	0 - 30
LFB	Dithiopyr	1.24	LCS	P	0 - 30
LFB	EPTC	10.4	LCS	P	0 - 30
LFB	Ethion	4.41	LCS	P	0 - 30
LFB	Ethoprop	6.55	LCS	P	0 - 30
LFB	Fenamiphos	39.4	LCS	F	0 - 30
LFB	Fipronil	0.460	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	2.71	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P365996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	1.97	LCS	P	0 - 30
LFB	Fipronil Sulfone	2.87	LCS	P	0 - 30
LFB	Fonofos	3.79	LCS	P	0 - 30
LFB	Hexazinone	28.0	LCS	P	0 - 30
LFB	Malathion	7.34	LCS	P	0 - 30
LFB	Metalaxyl	32.6	LCS	F	0 - 30
LFB	Metolachlor	2.87	LCS	P	0 - 30
LFB	Metribuzin	10.9	LCS	P	0 - 30
LFB	Mevinphos	6.92	LCS	P	0 - 30
LFB	Molinate	10.9	LCS	P	0 - 30
LFB	Norflurazon	6.34	LCS	P	0 - 30
LFB	Oxadiazon	3.46	LCS	P	0 - 30
LFB	Parathion Ethyl	0.704	LCS	P	0 - 30
LFB	Parathion Methyl	7.76	LCS	P	0 - 30
LFB	Pendimethalin	7.21	LCS	P	0 - 30
LFB	Phorate	14.0	LCS	P	0 - 30
LFB	Prodiamine	1.19	LCS	P	0 - 30
LFB	Prometon	19.2	LCS	P	0 - 30
LFB	Prometryn	7.86	LCS	P	0 - 30
LFB	Simazine	5.19	LCS	P	0 - 30
LFB	Tebuconazole	1.83	LCS	P	0 - 30
LFB	Terbufos	10.2	LCS	P	0 - 30
LFB	Terbuthylazine	5.62	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P365948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096571	2,4-D	14.2	Spike	P	0 - 30
2096571	Acetaminophen	2.31	Spike	P	0 - 30
2096571	Bentazon	6.06	Spike	P	0 - 30
2096571	Carbamazepine	9.76	Spike	P	0 - 30
2096571	Diuron	9.91	Spike	P	0 - 30
2096571	Fenuron	10.9	Spike	P	0 - 30
2096571	Fluridone	3.44	Spike	P	0 - 30
2096571	Hydrocodone	4.84	Spike	P	0 - 30
2096571	Ibuprofen	11.0	Spike	P	0 - 30
2096571	Imazapyr	10.3	Spike	P	0 - 30
2096571	Imidacloprid	2.49	Spike	P	0 - 30
2096571	Linuron	1.71	Spike	P	0 - 30
2096571	MCPP	19.1	Spike	P	0 - 30
2096571	Naproxen	12.1	Spike	P	0 - 30
2096571	Primidone	1.16	Spike	P	0 - 30
2096571	Pyraclostrobin	3.35	Spike	P	0 - 30
2096571	Triclopyr	17.1	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P365987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096084	Acesulfame K	1.17	Spike	P	0 - 30
2096084	AMPA	8.78	Spike	P	0 - 30
2096084	Endothall	3.36	Spike	P	0 - 30
2096084	Glufosinate	1.10	Spike	P	0 - 30
2096084	Glyphosate	10.5	Spike	P	0 - 30
2096084	Sucralose	5.07	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P366086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096948	Color (true)	0.133	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P366157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096415	Total Alkalinity	0.361	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P366544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096906	TDS	7.18	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P366530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096906	TSS	4.76	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P366161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096415	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P366238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096907	Organic Carbon	0.0785	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: 2096912
Field Sample ID: G2WA0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.3	P	30 - 160
EPA 8321B	Diuron-d6	73.4	P	30 - 160
EPA 8321B	Endothall-d6	80.9	P	30 - 160
EPA 8321B	Endothall-d6	80.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.8	P	30 - 160
EPA 8321B	Primidone-d5	95.3	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Lab Sample ID: 2096914
Field Sample ID: G2WA0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	108	P	68 - 130
EPA 8270E	Terbufos-d10	110	P	61 - 136

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A92215
Included Lab Sample IDs: 2096908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A92250
Included Lab Sample IDs: 2096906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.0	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A92259
Included Lab Sample IDs: 2096912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	110	112	P/P	60 - 160
Endothall	105	107	P/P	60 - 160

Reference Method: SM 2120 B
Run ID: A92266
Included Lab Sample IDs: 2096906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	100	P/P	90 - 115

Reference Method: EPA 8321B
Run ID: A92278
Included Lab Sample IDs: 2096912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.7	90.4	P/P	60 - 160
Glufosinate	93.5	95.5	P/P	60 - 160
Glyphosate	96.5	103	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A92286
Included Lab Sample IDs: 2096913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	99.2	99.8	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A92292
Included Lab Sample IDs: 2096906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A92292
Included Lab Sample IDs: 2096906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A92292
Included Lab Sample IDs: 2096906

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A92301
Included Lab Sample IDs: 2096907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A92321
Included Lab Sample IDs: 2096907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	95.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92329
Included Lab Sample IDs: 2096913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.5	97.2	P/P	90 - 110
Antimony	99.3	99.2	P/P	90 - 110
Arsenic	100	99.5	P/P	90 - 110
Boron	98.4	97.3	P/P	90 - 110
Cadmium	98.4	97.4	P/P	90 - 110
Lead	98.4	98.2	P/P	90 - 110
Nickel	98.2	98.0	P/P	90 - 110
Selenium	98.9	98.9	P/P	90 - 110
Silver	95.7	95.6	P/P	90 - 110
Thallium	95.0	93.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A92336
Included Lab Sample IDs: 2096906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	93.9	P/P	90 - 110
Sulfate	102	94.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A92337
Included Lab Sample IDs: 2096907

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: A92343
Included Lab Sample IDs: 2096907

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92368
Included Lab Sample IDs: 2096913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	96.6	95.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92387
Included Lab Sample IDs: 2096913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	94.3	94.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A92400
Included Lab Sample IDs: 2096907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	95.0	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A92423
Included Lab Sample IDs: 2096914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	104		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	105		P	80 - 120
Atrazine	103		P	80 - 120
Atrazine Desethyl	101		P	80 - 120
Azinphos Methyl	100		P	80 - 120
Bromacil	95.6		P	80 - 120
Butylate	102		P	80 - 120
Chlorpyrifos Ethyl	97.7		P	80 - 120
Chlorpyrifos Methyl	99.0		P	80 - 120
Cyanazine	101		P	80 - 120
Demeton	99.0		P	80 - 120
Diazinon	101		P	80 - 120
Dimethenamid	102		P	80 - 120
Disulfoton	96.1		P	80 - 120
Dithiopyr	99.8		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A92423
Included Lab Sample IDs: 2096914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
EPTC	99.3		P	80 - 120
Ethion	97.7		P	80 - 120
Ethoprop	101		P	80 - 120
Fenamiphos	99.4		P	80 - 120
Fipronil	101		P	80 - 120
Fipronil Desulfinyl	104		P	80 - 120
Fipronil Sulfide	98.8		P	80 - 120
Fipronil Sulfone	99.9		P	80 - 120
Fonofos	96.3		P	80 - 120
Hexazinone	96.7		P	80 - 120
Malathion	98.3		P	80 - 120
Metalaxyl	108		P	80 - 120
Metolachlor	104		P	80 - 120
Metribuzin	95.3		P	80 - 120
Mevinphos	100		P	80 - 120
Molinate	99.2		P	80 - 120
Norflurazon	104		P	80 - 120
Oxadiazon	102		P	80 - 120
Parathion Ethyl	98.7		P	80 - 120
Parathion Methyl	102		P	80 - 120
Pendimethalin	99.2		P	80 - 120
Phorate	97.2		P	80 - 120
Prodiamine	95.1		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	107		P	80 - 120
Simazine	98.4		P	80 - 120
Tebuconazole	101		P	80 - 120
Terbufos	97.8		P	80 - 120
Terbuthylazine	101		P	80 - 120

Reference Method: EPA 8321B
Run ID: A92430
Included Lab Sample IDs: 2096912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	120	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A92463
Included Lab Sample IDs: 2096912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.7	82.8	P/P	50 - 150
Acetaminophen	131	103	P/P	60 - 160
Bentazon	91.9	91.4	P/P	50 - 160
Carbamazepine	71.3	101	P/P	60 - 150
Diuron	107	108	P/P	60 - 150
Fenuron	98.3	88.7	P/P	60 - 150
Fluridone	120	114	P/P	60 - 160
Hydrocodone	91.9	86.9	P/P	60 - 150
Ibuprofen	86.4	87.7	P/P	50 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A92463
Included Lab Sample IDs: 2096912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	81.3	53.6	P/P	50 - 150
Imidacloprid	91.8	91.6	P/P	60 - 150
Linuron	90.5	93.1	P/P	60 - 150
MCPP	92.5	78.6	P/P	50 - 150
Naproxen	82.5	98.4	P/P	50 - 160
Primidone	102	85.4	P/P	60 - 150
Pyraclostrobin	104	98.8	P/P	60 - 150
Triclopyr	85.6	79.7	P/P	50 - 150

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.53	
EPA 200.7 Rev. 4.4	Barium	100		100	98.9	99.5			1.21
	Calcium	99.8		96.6	99.6				0.861
	Iron	104		105	104	103			1.09
	Magnesium	99.2		100	102				0.671
	Potassium	99.1		97.0	98.3				1.00
	Sodium	97.9		95.6	98.7				1.05
	Zinc	97.7		101	99.8	99.2			1.23
EPA 200.8 Rev. 5.4	Aluminum	98.1		101	100	100			0.473
	Antimony	97.7		102	103	103			0.545
	Arsenic	101		105	106	105			1.06
	Boron	100		103	104	102			0.126
	Cadmium	97.8		102	103	103			0.889
	Chromium	96.0		97.6	98.5	99.1			0.865
	Copper	92.3		94.2	94.9	95.8			0.711
	Lead	98.0		101	101	102			0.259
	Nickel	99.3		99.6	101	101			1.35
	Selenium	101		102	102	103			0.184
	Silver	98.5		98.0	99.9	100			1.94
	Thallium	99.6		104	104	103			0.0504
EPA 300.0 Rev. 2.1	Chloride	101		102	100				1.43
	Sulfate	103		101	100				0.946
EPA 350.1 Rev. 2.0	Ammonia-N	101		101	101				0.178
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		103	104				0.731
EPA 353.2 Rev. 2.0	NO2NO3-N	102		102	100				1.13
EPA 365.1 Rev. 2.0	Total-P	103		103	105				1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7		95.9	97.0				1.14
EPA 8270E	Acetochlor	120	114	112	109		5.09		2.81
	Alachlor	115	111	109	112		2.81		2.11
	Ametryn	101	96.5	104	106		4.32		1.65
	Atrazine	114	103	109	112		10.3		3.05
	Atrazine Desethyl	78.1	70.8	79.4	77.6		9.78		2.35
	Azinphos Methyl	109	94.5	99.3	96.1		14.1		3.26
	Bromacil	96.2	91.6	96.2	94.9		4.92		1.20
	Butylate	93.6	84.3	74.9	84.5		10.5		12.0
	Chlorpyrifos Ethyl	113	103	113	106		9.88		6.82
	Chlorpyrifos Methyl	108	99.5	100	103		7.97		2.39
	Cyanazine	158	137	127	165		14.0		25.8
	Demeton	87.2	65.5	69.0	70.9		28.5		2.69
	Diazinon	115	110	109	109		5.29		0.0929
	Dimethenamid	115	113	108	109		2.09		1.30
	Disulfoton	78.6	74.3	78.3	85.6		5.59		8.91
	Dithiopyr	115	114	109	110		1.24		1.28
	EPTC	91.4	82.3	79.5	75.7		10.4		4.88
	Ethion	108	103	99.6	109		4.41		9.27
	Ethoprop	106	99.5	96.2	103		6.55		6.55
	Fenamiphos	54.4	36.5	80.4	75.5		39.4		6.38
	Fipronil	108	108	103	105		0.460		1.44
	Fipronil Desulfinyl	102	99.5	96.5	100		2.71		3.57
	Fipronil Sulfide	104	102	94.8	105		1.97		10.4
	Fipronil Sulfone	105	102	97.1	107		2.87		9.64
	Fonofos	98.8	95.1	92.4	96.0		3.79		3.75
	Hexazinone	114	86.0	140	133		28.0		4.52
	Malathion	112	105	103	110		7.34		7.03

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270E	Metalaxyl	38.8	27.9	72.6	45.9	32.6		45.0
	Metolachlor	113	110	108	108	2.87		0.0794
	Metribuzin	116	104	126	123	10.9		2.30
	Mevinphos	88.3	82.4	85.4	80.6	6.92		5.82
	Molinate	100	90.1	88.7	85.4	10.9		3.78
	Norflurazon	107	100	100	102	6.34		2.00
	Oxadiazon	107	103	102	105	3.46		2.95
	Parathion Ethyl	95.7	96.4	93.6	94.3	0.704		0.776
	Parathion Methyl	99.3	91.9	94.0	89.6	7.76		4.72
	Pendimethalin	103	96.0	93.8	101	7.21		7.00
	Phorate	92.2	80.2	82.8	78.5	14.0		5.34
	Prodiamine	101	99.7	100	109	1.19		8.20
	Prometon	94.9	78.2	98.8	77.0	19.2		24.8
	Prometryn	88.1	95.3	95.1	99.0	7.86		4.07
	Simazine	106	101	107	103	5.19		4.24
	Tebuconazole	89.7	91.3	97.7	85.7	1.83		13.1
	Terbufos	102	92.1	92.1	98.1	10.2		6.32
	Terbuthylazine	111	105	104	109	5.62		4.84
EPA 8321B	2,4-D	113		93.1	117			14.2
	Acesulfame K	118		83.1	82.1			1.17
	Acetaminophen	125		98.9	101			2.31
	AMPA	101		18.2	28.7			8.78
	Bentazon	87.9		45.8	94.5			6.06
	Carbamazepine	102		72.2	80.2			9.76
	Diuron	94.7		63.8	71.6			9.91
	Endothall	107		77.0	74.5			3.36
	Fenuron	103		78.3	87.3			10.9
	Fluridone	112		70.0	81.4			3.44
	Glufosinate	98.5		39.1	39.5			1.10
	Glyphosate	100		14.7	32.0			10.5
	Hydrocodone	100		96.0	101			4.84
	Ibuprofen	71.7		63.0	70.3			11.0
	Imazapyr	72.3		97.5	115			10.3
	Imidacloprid	101		136	164			2.49
	Linuron	71.0		60.7	59.7			1.71
	MCPP	151		144	176			19.1
	Naproxen	102		62.1	55.0			12.1
	Primidone	93.2		77.4	78.5			1.16
	Pyraclostrobin	85.9		87.1	90.1			3.35
	Sucralose	94.8		52.8	50.2			5.07
	Triclopyr	98.5		130	154			17.1
SM 2120 B	Color (true)	98.7					0.133	
SM 2320 B-97	Total Alkalinity	105					0.361	
SM 2540 C-97	TDS						7.18	
SM 2540 D-97	TSS						4.76	
SM 4500 F-C-97	Fluoride	98.1		97.8	97.8			0.0
SM 5310 B-00	Organic Carbon	93.8		94.8	95.0			0.0785

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2096906

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	2096913
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2096913
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2096906
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2096906
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2096907
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2096907
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2096907
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2096907
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2096908
EPA 8270E / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2096914
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2096912
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2096912
SM 2120 B / E31780	True Color measured at 450 nm	2096906
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2096906
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2096906
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2096906
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2096906
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2096907

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	06/19/2019			06/20/2019 17:18	Adrian Shelby	2096906
EPA 200.7 Rev. 4.4	06/19/2019	06/20/2019 17:40	Elliott D. Healy	06/21/2019 16:01	Betina Topolski	2096913
EPA 200.8 Rev. 5.4	06/19/2019	06/20/2019 17:40	Elliott D. Healy	06/25/2019 02:24	Robert K Palmer	2096913
	06/19/2019	06/20/2019 17:40	Elliott D. Healy	06/25/2019 20:27	Robert K Palmer	2096913
	06/19/2019	06/20/2019 17:40	Elliott D. Healy	06/27/2019 08:24	Robert K Palmer	2096913
EPA 300.0 Rev. 2.1	06/19/2019			06/24/2019 23:53	Lipi Saha	2096906
EPA 350.1 Rev. 2.0	06/19/2019			06/25/2019 12:59	Ping Hua	2096907
EPA 351.2 Rev. 2.0	06/19/2019	06/25/2019 12:50	Sima Feizi	06/27/2019 09:25	Joseph Suarez	2096907
EPA 353.2 Rev. 2.0	06/19/2019			06/24/2019 11:01	Beverly Y. Sanders	2096907
EPA 365.1 Rev. 2.0	06/19/2019	06/24/2019 12:20	Sima Feizi	06/25/2019 15:28	Rosalyn Ballman	2096907
EPA 365.1 Rev. 2.0 dissolved	06/19/2019			06/19/2019 16:22	Jhamieka S. Greenwood	2096908
EPA 8270E	06/19/2019	06/21/2019 08:30	Rasheda Ghaffari	06/25/2019 17:58	Vandana T. Nagar	2096914
EPA 8321B	06/19/2019	06/20/2019 10:45	Rebecca Ware	06/20/2019 16:21	Rebecca Ware	2096912
	06/19/2019	06/20/2019 10:45	Rebecca Ware	06/21/2019 14:21	Rebecca Ware	2096912
	06/19/2019	06/20/2019 10:45	Rebecca Ware	06/27/2019 02:13	Rebecca Ware	2096912
	06/19/2019	06/21/2019 12:30	Hoor Shaik	06/22/2019 12:22	Juyoung Kim	2096912
SM 2120 B	06/19/2019			06/20/2019 16:40	Madeline Funaro	2096906
SM 2320 B-97	06/19/2019			06/22/2019 20:24	Dale L. Simmons	2096906
SM 2540 C-97	06/19/2019			06/24/2019 14:22	Yijie Li	2096906
SM 2540 D-97	06/19/2019			06/24/2019 14:22	Yijie Li	2096906
SM 4500 F-C-97	06/19/2019			06/22/2019 20:24	Dale L. Simmons	2096906
SM 5310 B-00	06/19/2019			06/24/2019 02:29	Madeline Funaro	2096907