Chemical Analysis Report

NE-DIST-2019-04-17-02

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

Event Description: **SCI Cedar, and Trout**
Request ID: **RQ-2019-04-08-19**
Customer: **NE-DIST**
Project ID: **SMP**

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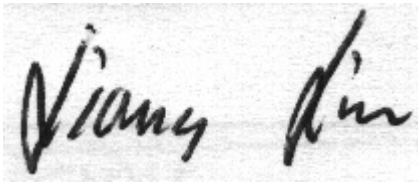
Date Certified: 08-MAY-2019 13:40



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: Cedar at Picketville Rd. **Collection Date/Time: 04/16/2019 10:05**

Field ID: G2NE1191 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078751	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P362373	
	EPA 300.0 Rev. 2.1	Chloride	53		mg Cl/L	P362595	
		Sulfate	15		mg SO4/L	P362596	
	SM 2120 B	Color (true)	97	A	PCU	P362389	
	SM 2320 B-97	Total Alkalinity	46	A	mg CaCO3/L	P362947	
	SM 2540 C-97	TDS	183		mg/L	P363046	
	SM 2540 D-97	TSS	4	I	mg/L	P362915	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P362951	
2078752	EPA 350.1 Rev. 2.0	Ammonia-N	0.087		mg N/L	P362725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P362704	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P362766	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P362616	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P362486	
2078753	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P362368	
2078759	EPA 8321B	2,4-D	0.0029	I	ug/L	P362252	
		Acesulfame K**	0.47		ug/L	P362469	
		AMPA**	0.21	I	ug/L	P362469	
		Sucralose**	0.70		ug/L	P362469	
		Acetaminophen**	0.0080	U	ug/L	P362252	
		Endothall**	0.25	U	ug/L	P362469	
		Glufosinate**	0.10	U	ug/L	P362469	
		Bentazon	0.0070		ug/L	P362252	
		Glyphosate**	0.34	I	ug/L	P362469	
		Carbamazepine**	8.0E-04	U	ug/L	P362252	
		Diuron	0.0020	U	ug/L	P362252	
		Fenuron	0.016	U	ug/L	P362252	
		Fluridone**	0.0017	I	ug/L	P362252	MS
		Imazapyr**	0.23		ug/L	P362252	
		Hydrocodone**	0.0020	U	ug/L	P362252	
		Ibuprofen**	0.020	U	ug/L	P362252	
		Imidacloprid	0.0020	U	ug/L	P362252	MS
		Linuron	0.0040	U	ug/L	P362252	
		MCPP	0.0020	U	ug/L	P362252	
		Naproxen**	0.0080	U	ug/L	P362252	
		Primidone**	0.0073	I	ug/L	P362252	
		Pyraclostrobin**	0.0020	U	ug/L	P362252	
		Triclopyr**	0.0040	U	ug/L	P362252	
2078762	EPA 200.7 Rev. 4.4	Barium	34.1		ug/L	P362450	
		Calcium	20.8		mg/L	P362450	
		Iron	740		ug/L	P362450	
		Magnesium	3.87		mg/L	P362450	
		Potassium	2.2		mg/L	P362450	
		Sodium	33.6		mg/L	P362450	

Field ID: G2NE1191 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078762	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P362450	
	EPA 200.8 Rev. 5.4	Aluminum	272		ug/L	P362450	
		Antimony	0.084	I	ug/L	P362450	
		Arsenic	0.64		ug/L	P362450	
		Boron**	46.9		ug/L	P362450	
		Cadmium	0.020	U	ug/L	P362450	
		Chromium	0.62	I	ug/L	P362450	
		Copper	0.52	I	ug/L	P362450	
		Lead	0.69		ug/L	P362450	
		Nickel	0.53	I	ug/L	P362450	
		Selenium	0.20	U	ug/L	P362450	
		Silver	0.010	U	ug/L	P362450	
		Thallium	0.10	U	ug/L	P362450	
2078765	EPA 8270D	Acetochlor	0.26	U	ng/L	P362397	
		Alachlor	0.26	U	ng/L	P362397	
		Ametryn	0.61	UJ	ng/L	P362397	RPD
		Atrazine	3.6		ng/L	P362397	
		Atrazine Desethyl	1.5	U	ng/L	P362397	
		Azinphos Methyl	5.1	U	ng/L	P362397	
		Bromacil	1.9	IJ	ng/L	P362397	RPD
		Butylate	0.41	U	ng/L	P362397	
		Chlorpyrifos Ethyl	0.26	U	ng/L	P362397	
		Chlorpyrifos Methyl	0.10	U	ng/L	P362397	
		Cyanazine	3.3	U	ng/L	P362397	
		Demeton	7.2	U	ng/L	P362397	
		Diazinon	0.13	U	ng/L	P362397	
		Dimethenamid**	0.10	U	ng/L	P362397	
		Disulfoton	0.51	U	ng/L	P362397	
		Dithiopyr**	0.10	U	ng/L	P362397	
		EPTC	1.3	U	ng/L	P362397	
		Ethion	0.15	U	ng/L	P362397	
		Ethoprop	0.10	U	ng/L	P362397	
		Fenamiphos	0.51	UJ	ng/L	P362397	LCS, RPD
		Fipronil	0.26	U	ng/L	P362397	
		Fipronil Desulfinyl**	0.13	U	ng/L	P362397	
		Fipronil Sulfide	0.15	U	ng/L	P362397	
		Fipronil Sulfone	0.15	U	ng/L	P362397	
		Fonofos	0.20	U	ng/L	P362397	
		Hexazinone	0.51	UJ	ng/L	P362397	LCS, MS, RPD
		Malathion	0.36	U	ng/L	P362397	
		Metalaxyl	0.31	UJ	ng/L	P362397	LCS, RPD
		Metolachlor	0.51	U	ng/L	P362397	
		Metribuzin	0.77	UJ	ng/L	P362397	CCV
		Mevinphos	0.51	UJ	ng/L	P362397	LCS, RPD

Field ID: G2NE1191 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078765	EPA 8270D	Molinate	0.31	U	ng/L	P362397	
		Norflurazon	0.51	U	ng/L	P362397	
		Oxadiazon**	0.18	I	ng/L	P362397	
		Parathion Ethyl	0.26	U	ng/L	P362397	
		Parathion Methyl	0.56	U	ng/L	P362397	
		Pendimethalin	1.0	U	ng/L	P362397	
		Phorate	0.26	U	ng/L	P362397	
		Prodiamine**	0.18	U	ng/L	P362397	
		Prometon	1.3	IJ	ng/L	P362397	LCS
		Prometryn	0.20	UJ	ng/L	P362397	LCS, RPD
		Simazine	0.51	U	ng/L	P362397	
		Tebuconazole**	0.51	UJ	ng/L	P362397	LCS, RPD
		Terbufos	0.10	U	ng/L	P362397	
		Terbuthylazine	0.44	U	ng/L	P362397	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8270D: MS accuracies for atrazine, simazine, metribuzin, 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: P362373

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362450

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: P362450

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: P362595

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362596

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362725

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: P362704

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362766

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362616

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362368

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

Reference Method: EPA 8270D
Batch ID: P362397

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270D
Batch ID: P362397

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: P362252

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: P362469

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: P362389

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362947

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

Reference Method: SM 2540 C-97
Batch ID: P363046

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362915

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362951

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362486

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: P362450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	108		P	85 - 115
Sodium	94.7		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	96.5		P	85 - 115
Arsenic	101		P	85 - 115
Boron	108		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	97.1		P	85 - 115
Copper	101		P	85 - 115
Lead	104		P	85 - 115
Nickel	101		P	85 - 115
Selenium	99.5		P	85 - 115
Silver	109		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362595

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362596

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362725

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362704

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: P362766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362616

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: P362368

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

Reference Method: EPA 8270D
Batch ID: P362397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	104	101	P/P	71 - 121
Alachlor	102	99.7	P/P	72 - 119
Ametryn	47.4	75.9	P/P	47 - 144
Atrazine	96.6	97.2	P/P	75 - 123
Atrazine Desethyl	52.1	49.3	P/P	45 - 133
Azinphos Methyl	101	96.4	P/P	66 - 165
Bromacil	62.2	43.8	P/P	43 - 123
Butylate	58.1	58.5	P/P	27 - 83.0
Chlorpyrifos Ethyl	98.7	97.0	P/P	70 - 117
Chlorpyrifos Methyl	90.9	84.9	P/P	71 - 120
Cyanazine	72.2	70.5	P/P	34 - 264
Demeton	61.0	65.0	P/P	41 - 122
Diazinon	98.2	94.8	P/P	70 - 127
Dimethenamid	103	99.2	P/P	66 - 123
Disulfoton	84.5	81.5	P/P	56 - 127
Dithiopyr	107	104	P/P	67 - 125
EPTC	61.0	58.3	P/P	24 - 84.0
Ethion	103	104	P/P	53 - 132
Ethoprop	88.1	84.3	P/P	57 - 117
Fenamiphos	32.9	15.2	F/F	55 - 136
Fipronil	103	91.4	P/P	64 - 126
Fipronil Desulfinyl	101	94.3	P/P	47 - 114
Fipronil Sulfide	102	96.2	P/P	57 - 120
Fipronil Sulfone	97.7	86.9	P/P	52 - 115
Fonofos	82.4	82.7	P/P	61 - 121
Hexazinone	48.4	16.9	F/F	62 - 131
Malathion	101	97.5	P/P	67 - 126
Metalaxyl	13.7	9.41	F/F	54 - 128
Metolachlor	104	100	P/P	71 - 118
Metribuzin	73.1	72.4	P/P	42 - 221
Mevinphos	51.2	26.7	P/F	45 - 114
Molinate	67.5	70.4	P/P	33 - 91.0
Norflurazon	92.6	81.4	P/P	60 - 123
Oxadiazon	110	109	P/P	66 - 121

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P362397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	90.2	89.3	P/P	73 - 111
Parathion Methyl	91.2	89.4	P/P	74 - 126
Pendimethalin	103	109	P/P	63 - 131
Phorate	73.7	72.0	P/P	54 - 115
Prodiamine	115	114	P/P	38 - 140
Prometon	22.6	27.6	F/F	61 - 120
Prometryn	59.8	88.9	F/P	62 - 126
Simazine	101	92.6	P/P	75 - 126
Tebuconazole	56.4	14.6	P/F	21 - 115
Terbufos	85.6	83.3	P/P	65 - 116
Terbuthylazine	100	97.6	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P362252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	66.6		P	40 - 150
Acetaminophen	88.0		P	30 - 150
Bentazon	99.8		P	30 - 150
Carbamazepine	81.6		P	40 - 150
Diuron	79.2		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	110		P	40 - 150
Hydrocodone	74.3		P	40 - 150
Ibuprofen	79.5		P	40 - 150
Imazapyr	78.4		P	40 - 150
Imidacloprid	89.3		P	40 - 150
Linuron	79.3		P	40 - 150
MCPP	80.4		P	40 - 150
Naproxen	52.3		P	40 - 150
Primidone	81.1		P	40 - 150
Pyraclostrobin	90.5		P	40 - 150
Triclopyr	56.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	116		P	40 - 150
Endothall	114		P	40 - 150
Glufosinate	119		P	40 - 150
Glyphosate	118		P	40 - 140
Sucralose	107		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P362389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P362947

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

Reference Method: SM 4500 F-C-97
Batch ID: P362951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078554	Barium	100	99.6	P/P	80 - 120
2078554	Calcium	102		P	80 - 120
2078554	Iron	104	105	P/P	80 - 120
2078554	Magnesium	109	109	P/P	80 - 120
2078554	Potassium	102	101	P/P	80 - 120
2078554	Sodium	90.8		P	80 - 120
2078554	Zinc	103	103	P/P	80 - 120
2078721	Barium	96.1		P	80 - 120
2078721	Calcium	95.9		P	80 - 120
2078721	Iron	103		P	80 - 120
2078721	Magnesium	102		P	80 - 120
2078721	Potassium	97.6		P	80 - 120
2078721	Sodium	99.0		P	80 - 120
2078721	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078554	Aluminum	100	97.2	P/P	80 - 120
2078554	Antimony	97.8	97.2	P/P	80 - 120
2078554	Arsenic	100	99.5	P/P	80 - 120
2078554	Boron	104	105	P/P	80 - 120
2078554	Cadmium	100	100	P/P	80 - 120
2078554	Chromium	94.5	92.3	P/P	80 - 120
2078554	Copper	101	99.6	P/P	80 - 120
2078554	Lead	104	103	P/P	80 - 120
2078554	Nickel	94.0	91.7	P/P	80 - 120
2078554	Selenium	98.0	95.5	P/P	80 - 120
2078554	Silver	108	106	P/P	80 - 120
2078554	Thallium	101	102	P/P	80 - 120
2078721	Aluminum	99.0		P	80 - 120
2078721	Antimony	96.0		P	80 - 120
2078721	Arsenic	99.4		P	80 - 120
2078721	Boron	107		P	80 - 120
2078721	Cadmium	99.3		P	80 - 120
2078721	Chromium	93.7		P	80 - 120
2078721	Copper	99.7		P	80 - 120
2078721	Lead	104		P	80 - 120
2078721	Nickel	99.7		P	80 - 120
2078721	Selenium	97.2		P	80 - 120
2078721	Silver	106		P	80 - 120
2078721	Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078628	Chloride	100		P	90 - 110
2078704	Chloride	99.8		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078628	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078899	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078693	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078718	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078747	O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P362397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078905	Acetochlor	93.2	94.2	P/P	63 - 129
2078905	Alachlor	89.9	89.6	P/P	65 - 127
2078905	Ametryn	92.4	94.3	P/P	40 - 164
2078905	Atrazine Desethyl	63.2	58.8	P/P	14 - 157
2078905	Azinphos Methyl	94.5	90.1	P/P	49 - 180
2078905	Butylate	46.5	47.6	P/P	10 - 94.0
2078905	Chlorpyrifos Ethyl	97.4	98.2	P/P	58 - 123
2078905	Chlorpyrifos Methyl	92.9	91.1	P/P	58 - 125
2078905	Cyanazine	108	97.0	P/P	24 - 253
2078905	Demeton	85.6	82.4	P/P	25 - 149
2078905	Diazinon	98.9	98.1	P/P	59 - 144
2078905	Dimethenamid	93.0	91.7	P/P	46 - 139
2078905	Disulfoton	90.9	84.6	P/P	54 - 132
2078905	Dithiopyr	95.9	96.5	P/P	64 - 130
2078905	EPTC	48.7	51.9	P/P	10 - 92.0
2078905	Ethion	101	98.2	P/P	30 - 148
2078905	Ethoprop	91.4	90.1	P/P	50 - 130
2078905	Fenamiphos	89.0	92.4	P/P	49 - 142
2078905	Fipronil	80.1	75.2	P/P	46 - 140
2078905	Fipronil Desulfinyl	68.7	66.3	P/P	30 - 121
2078905	Fipronil Sulfide	71.4	65.1	P/P	31 - 136
2078905	Fipronil Sulfone	52.7	45.4	P/P	16 - 136

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P362397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078905	Fonofos	93.1	91.2	P/P	55 - 129
2078905	Hexazinone	100	172	P/F	56 - 141
2078905	Malathion	95.6	92.3	P/P	56 - 135
2078905	Metalaxyl	90.4	82.6	P/P	54 - 135
2078905	Metolachlor	90.3	92.5	P/P	51 - 140
2078905	Mevinphos	77.1	83.1	P/P	33 - 131
2078905	Molinate	65.9	66.6	P/P	14 - 98.0
2078905	Norflurazon	77.6	72.3	P/P	34 - 136
2078905	Oxadiazon	94.8	94.8	P/P	67 - 116
2078905	Parathion Ethyl	95.5	92.5	P/P	66 - 118
2078905	Parathion Methyl	99.7	96.5	P/P	64 - 136
2078905	Pendimethalin	120	119	P/P	59 - 144
2078905	Phorate	82.3	79.2	P/P	42 - 130
2078905	Prodiamine	124	123	P/P	42 - 148
2078905	Prometon	93.7	121	P/P	59 - 134
2078905	Prometryn	95.0	92.9	P/P	54 - 135
2078905	Tebuconazole	78.9	75.2	P/P	10 - 131
2078905	Terbufos	99.5	92.6	P/P	57 - 131
2078905	Terbuthylazine	96.7	94.8	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P362252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078237	2,4-D	86.5	87.4	P/P	40 - 150
2078237	Acetaminophen	77.5	83.3	P/P	30 - 150
2078237	Bentazon	67.3	66.2	P/P	30 - 150
2078237	Carbamazepine	86.6	94.4	P/P	40 - 150
2078237	Diuron	72.2	70.7	P/P	40 - 150
2078237	Fenuron	96.8	109	P/P	40 - 150
2078237	Fluridone	176	72.4	F/P	40 - 150
2078237	Hydrocodone	93.7	94.9	P/P	40 - 150
2078237	Ibuprofen	65.0	61.0	P/P	40 - 150
2078237	Imazapyr	97.0	55.2	P/P	40 - 150
2078237	Imidacloprid	159	170	F/F	40 - 150
2078237	Linuron	70.9	72.5	P/P	40 - 150
2078237	MCPP	101	105	P/P	40 - 150
2078237	Naproxen	69.9	56.9	P/P	40 - 150
2078237	Primidone	67.6	64.2	P/P	40 - 150
2078237	Pyraclostrobin	74.6	80.8	P/P	40 - 150
2078237	Triclopyr	61.2	56.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078457	Acesulfame K	102	86.1	P/P	40 - 150
2078457	AMPA	147	145	P/P	40 - 150
2078457	Endothall	103	105	P/P	40 - 150
2078457	Glufosinate	112	123	P/P	40 - 150
2078457	Glyphosate	113	114	P/P	40 - 140
2078457	Sucralose	76.2	93.8	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P362951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078751	Fluoride	97.3	97.3	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078623	Organic Carbon	98.2	98.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078733	Turbidity	4.23	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078554	Barium	0.474	Spike	P	0 - 20
2078554	Calcium	0.346	Spike	P	0 - 20
2078554	Iron	0.572	Spike	P	0 - 20
2078554	Magnesium	0.0358	Spike	P	0 - 20
2078554	Potassium	0.551	Spike	P	0 - 20
2078554	Sodium	1.11	Spike	P	0 - 20
2078554	Zinc	0.746	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078554	Aluminum	2.80	Spike	P	0 - 20
2078554	Antimony	0.587	Spike	P	0 - 20
2078554	Arsenic	0.652	Spike	P	0 - 20
2078554	Boron	0.890	Spike	P	0 - 20
2078554	Cadmium	0.345	Spike	P	0 - 20
2078554	Chromium	2.33	Spike	P	0 - 20
2078554	Copper	1.57	Spike	P	0 - 20
2078554	Lead	0.698	Spike	P	0 - 20
2078554	Nickel	2.25	Spike	P	0 - 20
2078554	Selenium	2.57	Spike	P	0 - 20
2078554	Silver	1.83	Spike	P	0 - 20
2078554	Thallium	0.591	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078704	Chloride	0.0472	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078704	Sulfate	0.365	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078899	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078734	Kjeldahl Nitrogen	4.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078693	NO2NO3-N	0.837	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078718	Total-P	0.180	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078747	O-Phosphate-P	0.699	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078905	Acetochlor	1.11	Spike	P	0 - 30
2078905	Alachlor	0.334	Spike	P	0 - 30
2078905	Ametryn	1.55	Spike	P	0 - 30
2078905	Atrazine	1.89	Spike	P	0 - 30
2078905	Atrazine Desethyl	5.13	Spike	P	0 - 30
2078905	Azinphos Methyl	4.78	Spike	P	0 - 30
2078905	Bromacil	4.83	Spike	P	0 - 30
2078905	Butylate	2.38	Spike	P	0 - 30
2078905	Chlorpyrifos Ethyl	0.884	Spike	P	0 - 30
2078905	Chlorpyrifos Methyl	1.94	Spike	P	0 - 30
2078905	Cyanazine	10.9	Spike	P	0 - 30
2078905	Demeton	3.78	Spike	P	0 - 30
2078905	Diazinon	0.864	Spike	P	0 - 30
2078905	Dimethenamid	1.46	Spike	P	0 - 30
2078905	Disulfoton	7.18	Spike	P	0 - 30
2078905	Dithiopyr	0.549	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078905	EPTC	6.41	Spike	P	0 - 30
2078905	Ethion	2.36	Spike	P	0 - 30
2078905	Ethoprop	1.10	Spike	P	0 - 30
2078905	Fenamiphos	3.79	Spike	P	0 - 30
2078905	Fipronil	5.70	Spike	P	0 - 30
2078905	Fipronil Desulfinyl	2.99	Spike	P	0 - 30
2078905	Fipronil Sulfide	7.15	Spike	P	0 - 30
2078905	Fipronil Sulfone	8.46	Spike	P	0 - 30
2078905	Fonofos	2.08	Spike	P	0 - 30
2078905	Hexazinone	46.0	Spike	F	0 - 30
2078905	Malathion	3.47	Spike	P	0 - 30
2078905	Metalaxyl	8.69	Spike	P	0 - 30
2078905	Metolachlor	1.40	Spike	P	0 - 30
2078905	Metribuzin	7.82	Spike	P	0 - 30
2078905	Mevinphos	7.50	Spike	P	0 - 30
2078905	Molinate	1.09	Spike	P	0 - 30
2078905	Norflurazon	7.07	Spike	P	0 - 30
2078905	Oxadiazon	0.00932	Spike	P	0 - 30
2078905	Parathion Ethyl	3.23	Spike	P	0 - 30
2078905	Parathion Methyl	3.21	Spike	P	0 - 30
2078905	Pendimethalin	1.32	Spike	P	0 - 30
2078905	Phorate	3.83	Spike	P	0 - 30
2078905	Prodiamine	0.994	Spike	P	0 - 30
2078905	Prometon	25.4	Spike	P	0 - 30
2078905	Prometryn	2.21	Spike	P	0 - 30
2078905	Simazine	0.137	Spike	P	0 - 30
2078905	Tebuconazole	4.00	Spike	P	0 - 30
2078905	Terbufos	7.11	Spike	P	0 - 30
2078905	Terbuthylazine	2.03	Spike	P	0 - 30
LFB	Acetochlor	3.46	LCS	P	0 - 30
LFB	Alachlor	2.74	LCS	P	0 - 30
LFB	Ametryn	46.1	LCS	F	0 - 30
LFB	Atrazine	0.615	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.45	LCS	P	0 - 30
LFB	Azinphos Methyl	4.94	LCS	P	0 - 30
LFB	Bromacil	34.7	LCS	F	0 - 30
LFB	Butylate	0.548	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.69	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	6.83	LCS	P	0 - 30
LFB	Cyanazine	2.41	LCS	P	0 - 30
LFB	Demeton	6.40	LCS	P	0 - 30
LFB	Diazinon	3.46	LCS	P	0 - 30
LFB	Dimethenamid	3.42	LCS	P	0 - 30
LFB	Disulfoton	3.61	LCS	P	0 - 30
LFB	Dithiopyr	2.59	LCS	P	0 - 30
LFB	EPTC	4.42	LCS	P	0 - 30
LFB	Ethion	1.22	LCS	P	0 - 30
LFB	Ethoprop	4.42	LCS	P	0 - 30
LFB	Fenamiphos	74.0	LCS	F	0 - 30
LFB	Fipronil	12.0	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	6.75	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	5.39	LCS	P	0 - 30
LFB	Fipronil Sulfone	11.8	LCS	P	0 - 30
LFB	Fonofos	0.370	LCS	P	0 - 30
LFB	Hexazinone	96.3	LCS	F	0 - 30
LFB	Malathion	3.35	LCS	P	0 - 30
LFB	Metalaxyl	37.0	LCS	F	0 - 30
LFB	Metolachlor	3.58	LCS	P	0 - 30
LFB	Metribuzin	0.906	LCS	P	0 - 30
LFB	Mevinphos	63.1	LCS	F	0 - 30
LFB	Molinate	4.11	LCS	P	0 - 30
LFB	Norflurazon	12.9	LCS	P	0 - 30
LFB	Oxadiazon	1.35	LCS	P	0 - 30
LFB	Parathion Ethyl	1.04	LCS	P	0 - 30
LFB	Parathion Methyl	2.08	LCS	P	0 - 30
LFB	Pendimethalin	6.04	LCS	P	0 - 30
LFB	Phorate	2.36	LCS	P	0 - 30
LFB	Prodiamine	0.668	LCS	P	0 - 30
LFB	Prometon	20.0	LCS	P	0 - 30
LFB	Prometryn	39.2	LCS	F	0 - 30
LFB	Simazine	8.61	LCS	P	0 - 30
LFB	Tebuconazole	118	LCS	F	0 - 30
LFB	Terbufos	2.69	LCS	P	0 - 30
LFB	Terbuthylazine	2.59	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P362252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078237	2,4-D	0.554	Spike	P	0 - 30
2078237	Acetaminophen	7.21	Spike	P	0 - 30
2078237	Bentazon	0.814	Spike	P	0 - 30
2078237	Carbamazepine	8.15	Spike	P	0 - 30
2078237	Diuron	2.18	Spike	P	0 - 30
2078237	Fenuron	12.0	Spike	P	0 - 30
2078237	Fluridone	20.4	Spike	P	0 - 30
2078237	Hydrocodone	1.28	Spike	P	0 - 30
2078237	Ibuprofen	6.24	Spike	P	0 - 30
2078237	Imazapyr	24.0	Spike	P	0 - 30
2078237	Imidacloprid	6.54	Spike	P	0 - 30
2078237	Linuron	2.32	Spike	P	0 - 30
2078237	MCPP	4.19	Spike	P	0 - 30
2078237	Naproxen	20.6	Spike	P	0 - 30
2078237	Primidone	4.56	Spike	P	0 - 30
2078237	Pyraclostrobin	8.08	Spike	P	0 - 30
2078237	Triclopyr	8.83	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P362469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078457	Acesulfame K	16.8	Spike	P	0 - 30
2078457	AMPA	1.17	Spike	P	0 - 30
2078457	Endothall	1.13	Spike	P	0 - 30
2078457	Glufosinate	9.39	Spike	P	0 - 30
2078457	Glyphosate	1.08	Spike	P	0 - 30
2078457	Sucralose	20.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P362389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078751	Color (true)	0.861	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078751	Total Alkalinity	0.124	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078733	TDS	3.05	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078751	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078623	Organic Carbon	0.328	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: 2078759
Field Sample ID: G2NE1191

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.6	P	30 - 160
EPA 8321B	Diuron-d6	79.7	P	30 - 160
EPA 8321B	Endothall-d6	97.2	P	30 - 160
EPA 8321B	Endothall-d6	97.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.2	P	30 - 160
EPA 8321B	Primidone-d5	80.9	P	30 - 160
EPA 8321B	Sucralose-d6	90.3	P	30 - 160
EPA 8321B	Sucralose-d6	90.3	P	30 - 160

Lab Sample ID: 2078765
Field Sample ID: G2NE1191

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	89.6	P	68 - 130
EPA 8270D	Terbufos-d10	80.8	P	61 - 136

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90760
Included Lab Sample IDs: 2078751

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90794
Included Lab Sample IDs: 2078753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	99.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90795
Included Lab Sample IDs: 2078751

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

Reference Method: SM 2120 B
Run ID: A90804
Included Lab Sample IDs: 2078751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115

Reference Method: SM 5310 B-00
Run ID: A90843
Included Lab Sample IDs: 2078752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2078759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.9	98.0	P/P	50 - 150
Acetaminophen	84.5	93.3	P/P	60 - 160
Bentazon	113	111	P/P	50 - 160
Carbamazepine	103	102	P/P	60 - 150
Diuron	100	99.5	P/P	60 - 150
Fenuron	100	104	P/P	60 - 150
Fluridone	62.6	98.6	P/P	60 - 160
Hydrocodone	91.3	88.6	P/P	60 - 150
Ibuprofen	111	125	P/P	50 - 160
Imazapyr	102	99.2	P/P	50 - 150
Imidacloprid	87.8	93.8	P/P	60 - 150
Linuron	93.3	93.2	P/P	60 - 150
MCPP	92.7	85.1	P/P	50 - 150
Naproxen	82.0	83.1	P/P	50 - 160
Primidone	89.2	79.1	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2078759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	136	133	P/P	60 - 150
Triclopyr	101	99.2	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A90878
Included Lab Sample IDs: 2078759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	140	P/P	60 - 160
Endothall	107	117	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90906
Included Lab Sample IDs: 2078762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.7	98.0	P/P	90 - 110
Calcium	100	97.1	P/P	90 - 110
Iron	99.0	98.8	P/P	90 - 110
Magnesium	98.3	97.7	P/P	90 - 110
Potassium	96.1	97.0	P/P	90 - 110
Sodium	95.0	102	P/P	90 - 110
Zinc	98.1	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90917
Included Lab Sample IDs: 2078759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.0	117	P/P	60 - 160
Glufosinate	104	121	P/P	60 - 160
Glyphosate	105	120	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90927
Included Lab Sample IDs: 2078752

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90949
Included Lab Sample IDs: 2078752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90968
Included Lab Sample IDs: 2078752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90990
Included Lab Sample IDs: 2078759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.5	99.2	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90992
Included Lab Sample IDs: 2078752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	92.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91006
Included Lab Sample IDs: 2078762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	99.7	P/P	90 - 110
Antimony	96.1	95.7	P/P	90 - 110
Arsenic	97.8	98.9	P/P	90 - 110
Boron	107	108	P/P	90 - 110
Cadmium	98.8	99.1	P/P	90 - 110
Chromium	99.8	99.5	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Nickel	100	100	P/P	90 - 110
Selenium	94.9	96.7	P/P	90 - 110
Silver	107	108	P/P	90 - 110
Thallium	94.2	94.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A91045
Included Lab Sample IDs: 2078751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91045
Included Lab Sample IDs: 2078751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A91053
Included Lab Sample IDs: 2078765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	104		P	80 - 120
Atrazine	99.3		P	80 - 120
Atrazine Desethyl	86.9		P	80 - 120
Azinphos Methyl	96.9		P	80 - 120
Bromacil	101		P	80 - 120
Butylate	97.0		P	80 - 120
Chlorpyrifos Ethyl	99.0		P	80 - 120
Chlorpyrifos Methyl	97.9		P	80 - 120
Cyanazine	86.5		P	80 - 120
Demeton	80.2		P	80 - 120
Diazinon	101		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	96.7		P	80 - 120
Dithiopyr	104		P	80 - 120
EPTC	101		P	80 - 120
Ethion	95.9		P	80 - 120
Ethoprop	97.8		P	80 - 120
Fenamiphos	95.6		P	80 - 120
Fipronil	101		P	80 - 120
Fipronil Desulfinyl	103		P	80 - 120
Fipronil Sulfide	96.6		P	80 - 120
Fipronil Sulfone	96.4		P	80 - 120
Fonofos	101		P	80 - 120
Hexazinone	99.1		P	80 - 120
Malathion	96.5		P	80 - 120
Metalaxyl	107		P	80 - 120
Metolachlor	107		P	80 - 120
Metribuzin	73.0*		F	80 - 120
Mevinphos	98.2		P	80 - 120
Molinate	94.9		P	80 - 120
Norflurazon	103		P	80 - 120
Oxadiazon	106		P	80 - 120
Parathion Ethyl	95.4		P	80 - 120
Parathion Methyl	96.2		P	80 - 120
Pendimethalin	97.0		P	80 - 120
Phorate	95.6		P	80 - 120
Prodiamine	99.7		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	105		P	80 - 120
Simazine	99.9		P	80 - 120
Tebuconazole	103		P	80 - 120
Terbufos	94.7		P	80 - 120
Terbuthylazine	96.2		P	80 - 120

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							4.23	
EPA 200.7 Rev. 4.4	Barium	101		100	99.6	96.1			0.474
	Calcium	102		102	95.9				0.346
	Iron	105		104	105	103			0.572
	Magnesium	112		109	109	102			0.0358
	Potassium	108		102	101	97.6			0.551
	Sodium	94.7		90.8	99.0				1.11
	Zinc	103		103	103	100			0.746
EPA 200.8 Rev. 5.4	Aluminum	100		100	97.2	99.0			2.80
	Antimony	96.5		97.8	97.2	96.0			0.587
	Arsenic	101		100	99.5	99.4			0.652
	Boron	108		104	105	107			0.890
	Cadmium	100		100	100	99.3			0.345
	Chromium	97.1		94.5	92.3	93.7			2.33
	Copper	101		101	99.6	99.7			1.57
	Lead	104		104	103	104			0.698
	Nickel	101		94.0	91.7	99.7			2.25
	Selenium	99.5		98.0	95.5	97.2			2.57
	Silver	109		108	106	106			1.83
	Thallium	101		101	102	102			0.591
EPA 300.0 Rev. 2.1	Chloride	98.9		99.8	100			0.0472	
	Sulfate	101		101				0.365	
EPA 350.1 Rev. 2.0	Ammonia-N	102		99.8	101				1.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104							4.33
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		97.2					0.837
EPA 365.1 Rev. 2.0	Total-P	103		101	101				0.180
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		99.8	100				0.699
EPA 8270D	Acetochlor	104	101	93.2	94.2		3.46		1.11
	Alachlor	102	99.7	89.9	89.6		2.74		0.334
	Ametryn	47.4	75.9	92.4	94.3		46.1		1.55
	Atrazine	96.6	97.2				0.615		1.89
	Atrazine Desethyl	52.1	49.3	63.2	58.8		5.45		5.13
	Azinphos Methyl	101	96.4	94.5	90.1		4.94		4.78
	Bromacil	62.2	43.8				34.7		4.83
	Butylate	58.1	58.5	46.5	47.6		0.548		2.38
	Chlorpyrifos Ethyl	98.7	97.0	97.4	98.2		1.69		0.884
	Chlorpyrifos Methyl	90.9	84.9	92.9	91.1		6.83		1.94
	Cyanazine	72.2	70.5	108	97.0		2.41		10.9
	Demeton	61.0	65.0	85.6	82.4		6.40		3.78
	Diazinon	98.2	94.8	98.9	98.1		3.46		0.864
	Dimethenamid	103	99.2	93.0	91.7		3.42		1.46
	Disulfoton	84.5	81.5	90.9	84.6		3.61		7.18
	Dithiopyr	107	104	95.9	96.5		2.59		0.549
	EPTC	61.0	58.3	48.7	51.9		4.42		6.41
	Ethion	103	104	101	98.2		1.22		2.36
	Ethoprop	88.1	84.3	91.4	90.1		4.42		1.10
	Fenamiphos	32.9	15.2	89.0	92.4		74.0		3.79
	Fipronil	103	91.4	80.1	75.2		12.0		5.70
	Fipronil Desulfinyl	101	94.3	68.7	66.3		6.75		2.99
	Fipronil Sulfide	102	96.2	71.4	65.1		5.39		7.15
	Fipronil Sulfone	97.7	86.9	52.7	45.4		11.8		8.46
	Fonofos	82.4	82.7	93.1	91.2		0.370		2.08
	Hexazinone	48.4	16.9	100	172		96.3		46.0
	Malathion	101	97.5	95.6	92.3		3.35		3.47

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	Metalaxyl	13.7	9.41	90.4	82.6	37.0		8.69
	Metolachlor	104	100	90.3	92.5	3.58		1.40
	Metribuzin	73.1	72.4			0.906		7.82
	Mevinphos	51.2	26.7	77.1	83.1	63.1		7.50
	Molinate	67.5	70.4	65.9	66.6	4.11		1.09
	Norflurazon	92.6	81.4	77.6	72.3	12.9		7.07
	Oxadiazon	110	109	94.8	94.8	1.35		0.0093
	Parathion Ethyl	90.2	89.3	95.5	92.5	1.04		3.23
	Parathion Methyl	91.2	89.4	99.7	96.5	2.08		3.21
	Pendimethalin	103	109	120	119	6.04		1.32
	Phorate	73.7	72.0	82.3	79.2	2.36		3.83
	Prodiamine	115	114	124	123	0.668		0.994
	Prometon	22.6	27.6	93.7	121	20.0		25.4
	Prometryn	59.8	88.9	95.0	92.9	39.2		2.21
	Simazine	101	92.6			8.61		0.137
	Tebuconazole	56.4	14.6	78.9	75.2	118		4.00
	Terbufos	85.6	83.3	99.5	92.6	2.69		7.11
	Terbuthylazine	100	97.6	96.7	94.8	2.59		2.03
EPA 8321B	2,4-D	66.6		86.5	87.4			0.554
	Acesulfame K	106		102	86.1			16.8
	Acetaminophen	88.0		77.5	83.3			7.21
	AMPA	116		145	147			1.17
	Bentazon	99.8		67.3	66.2			0.814
	Carbamazepine	81.6		86.6	94.4			8.15
	Diuron	79.2		72.2	70.7			2.18
	Endothall	114		103	105			1.13
	Fenuron	103		96.8	109			12.0
	Fluridone	110		176	72.4			20.4
	Glufosinate	119		123	112			9.39
	Glyphosate	118		114	113			1.08
	Hydrocodone	74.3		93.7	94.9			1.28
	Ibuprofen	79.5		65.0	61.0			6.24
	Imazapyr	78.4		97.0	55.2			24.0
	Imidacloprid	89.3		159	170			6.54
	Linuron	79.3		70.9	72.5			2.32
	MCPP	80.4		101	105			4.19
	Naproxen	52.3		69.9	56.9			20.6
	Primidone	81.1		67.6	64.2			4.56
	Pyraclostrobin	90.5		74.6	80.8			8.08
	Sucralose	107		76.2	93.8			20.7
	Triclopyr	56.2		61.2	56.0			8.83
SM 2120 B	Color (true)	104					0.861	
SM 2320 B-97	Total Alkalinity	102					0.124	
SM 2540 C-97	TDS						3.05	
SM 4500 F-C-97	Fluoride	98.3		97.3	97.3			0.0
SM 5310 B-00	Organic Carbon	99.5		98.2	98.8			0.328

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2078751

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	2078762
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2078762
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2078751
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2078751
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2078752
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2078752
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2078752
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2078752
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2078753
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2078765
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2078759
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2078759
SM 2120 B / E31780	True Color measured at 450 nm	2078751
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2078751
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2078751
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2078751
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2078751
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2078752

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	04/17/2019			04/17/2019 17:22	Adrian Shelby	2078751
EPA 200.7 Rev. 4.4	04/17/2019	04/18/2019 16:35	Elliott D. Healy	04/22/2019 18:18	Betina Topolski	2078762
EPA 200.8 Rev. 5.4	04/17/2019	04/18/2019 16:35	Elliott D. Healy	04/26/2019 01:42	Robert K Palmer	2078762
EPA 300.0 Rev. 2.1	04/17/2019			04/19/2019 20:34	Lipi Saha	2078751
EPA 350.1 Rev. 2.0	04/17/2019			04/23/2019 11:14	Ping Hua	2078752
EPA 351.2 Rev. 2.0	04/17/2019	04/23/2019 12:00	Adrian Shelby	04/25/2019 11:40	Joseph Suarez	2078752
EPA 353.2 Rev. 2.0	04/17/2019			04/24/2019 09:20	Beverly Y. Sanders	2078752
EPA 365.1 Rev. 2.0	04/17/2019	04/22/2019 15:10	Sima Feizi	04/23/2019 12:26	Rosalyn Ballman	2078752
EPA 365.1 Rev. 2.0 dissolved	04/17/2019			04/17/2019 16:29	Jhamieka S. Greenwood	2078753
EPA 8270D	04/17/2019	04/19/2019 09:00	Fe-Val Siddell	04/23/2019 15:59	Vandana T. Nagar	2078765
EPA 8321B	04/17/2019	04/18/2019 12:00	Hoor Shaik	04/22/2019 05:02	Juyoung Kim	2078759
	04/17/2019	04/19/2019 10:15	Rebecca Ware	04/19/2019 14:02	Rebecca Ware	2078759
	04/17/2019	04/19/2019 10:15	Rebecca Ware	04/22/2019 11:50	Rebecca Ware	2078759
	04/17/2019	04/19/2019 10:15	Rebecca Ware	04/24/2019 18:20	Rebecca Ware	2078759
SM 2120 B	04/17/2019			04/17/2019 16:22	Mariam Hanna	2078751
SM 2320 B-97	04/17/2019			04/26/2019 02:11	Dale L. Simmons	2078751
SM 2540 C-97	04/17/2019			04/22/2019 15:58	Yijie Li	2078751
SM 2540 D-97	04/17/2019			04/22/2019 15:58	Yijie Li	2078751
SM 4500 F-C-97	04/17/2019			04/26/2019 02:01	Dale L. Simmons	2078751
SM 5310 B-00	04/17/2019			04/19/2019 01:40	Julia Storbeck	2078752