

Chemical Analysis Report

NE-DIST-2019-03-22-01

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

Event Description: **SCI Deep 2245, Ryal 2302**
Request ID: **RQ-2019-03-18-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 10-APR-2019 13:29

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

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: DEEP CR @ US 90

Collection Date/Time: 03/21/2019 09:40

Field ID: 19010085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071987	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P360922	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P361186	
		Sulfate	9.0		mg SO4/L	P361189	
	SM 2120 B	Color (true)	210	A	PCU	P360950	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	137		mg/L	P361411	
	SM 2540 D-97	TSS	2	I	mg/L	P361415	
2071988	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P361328	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P361253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P361161	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P361048	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P361195	
2071989	SM 5310 B-00	Organic Carbon	24		mg C/L	P361055	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P360927	
2071994	EPA 8321B	2,4-D	0.0020	U	ug/L	P360773	
		Acesulfame K**	0.10	U	ug/L	P360937	
		AMPA**	0.10	U	ug/L	P360937	
		Sucralose**	1.4		ug/L	P360937	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	U	ug/L	P360937	
		Glufosinate**	0.10	U	ug/L	P360937	
		Bentazon	0.0033		ug/L	P360773	
		Glyphosate**	0.10	U	ug/L	P360937	
		Carbamazepine**	0.0044		ug/L	P360773	
		Diuron	0.0027	I	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	0.0013	I	ug/L	P360773	
		Imazapyr**	0.078		ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.0021	I	ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0020	U	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	U	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	
2071995	EPA 200.7 Rev. 4.4	Barium	19.5		ug/L	P361042	
		Calcium	14.0		mg/L	P361042	
		Iron	1.35E+03		ug/L	P361042	
		Magnesium	3.13		mg/L	P361042	
		Potassium	1.5		mg/L	P361042	
		Sodium	13.4		mg/L	P361042	

Field ID: 19010085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071995	EPA 200.7 Rev. 4.4	Zinc	6.0	I	ug/L	P361042	
		Aluminum	590		ug/L	P361042	
	EPA 200.8 Rev. 5.4	Antimony	0.12	I	ug/L	P361042	
		Arsenic	0.54		ug/L	P361042	
		Boron**	42.2		ug/L	P361042	
		Cadmium	0.020	U	ug/L	P361042	
		Chromium	1.6	I	ug/L	P361042	
		Copper	0.98		ug/L	P361042	
		Lead	1.08		ug/L	P361042	
		Nickel	1.0	I	ug/L	P361042	
		Selenium	0.20	U	ug/L	P361042	
		Silver	0.010	U	ug/L	P361042	
		Thallium	0.10	U	ug/L	P361042	
2071996	EPA 8270D	Acetochlor	0.25	U	ng/L	P360892	
		Alachlor	0.25	U	ng/L	P360892	
		Ametryn	0.60	U	ng/L	P360892	
		Atrazine	3.8		ng/L	P360892	
		Atrazine Desethyl	1.5	U	ng/L	P360892	RPD
		Azinphos Methyl	5.0	U	ng/L	P360892	
		Bromacil	2.8		ng/L	P360892	
		Butylate	0.40	U	ng/L	P360892	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P360892	MS, RPD
		Chlorpyrifos Methyl	0.10	U	ng/L	P360892	
		Cyanazine	3.3	U	ng/L	P360892	
		Demeton	7.0	U	ng/L	P360892	MS, RPD
		Diazinon	0.13	U	ng/L	P360892	
		Dimethenamid**	0.10	U	ng/L	P360892	MS, RPD
		Disulfoton	0.50	U	ng/L	P360892	MS, RPD
		Dithiopyr**	0.10	U	ng/L	P360892	
		EPTC	1.3	U	ng/L	P360892	RPD
		Ethion	0.15	U	ng/L	P360892	
		Ethoprop	0.10	U	ng/L	P360892	MS, RPD
		Fenamiphos	0.50	U	ng/L	P360892	RPD
		Fipronil	0.55	I	ng/L	P360892	
		Fipronil Desulfinyl**	1.7		ng/L	P360892	
		Fipronil Sulfide	3.8		ng/L	P360892	
		Fipronil Sulfone	1.6		ng/L	P360892	
		Fonofos	0.20	U	ng/L	P360892	
		Hexazinone	5.8		ng/L	P360892	
		Malathion	0.35	U	ng/L	P360892	
		Metalaxyl	0.30	U	ng/L	P360892	
		Metolachlor	0.93	I	ng/L	P360892	
		Metribuzin	0.89	IJ	ng/L	P360892	RPD
		Mevinphos	0.50	U	ng/L	P360892	MS, RPD
		Molinate	0.30	U	ng/L	P360892	RPD

Field ID: 19010085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071996	EPA 8270D	Norflurazon	0.50	U	ng/L	P360892	
		Oxadiazon**	0.15	IJ	ng/L	P360892	
		Parathion Ethyl	0.25	U	ng/L	P360892	
		Parathion Methyl	0.55	U	ng/L	P360892	
		Pendimethalin	1.0	U	ng/L	P360892	
		Phorate	0.25	U	ng/L	P360892	MS, RPD
		Prodiamine**	0.18	U	ng/L	P360892	
		Prometon	2.8	I	ng/L	P360892	
		Prometryn	0.20	U	ng/L	P360892	
		Simazine	0.50	U	ng/L	P360892	
		Tebuconazole**	0.50	UJ	ng/L	P360892	LCS, MS, RPD
		Terbufos	0.10	U	ng/L	P360892	
		Terbuthylazine	0.43	U	ng/L	P360892	

Ref. Method and Comment:

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

EPA 8270D: MS accuracies for alachlor and metolachlor not assessed due to high content of these parameters in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360922

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

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: P361042

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: P361186

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

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: P361161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

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

Reference Method: EPA 8270D
Batch ID: P360892

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270D
Batch ID: P360892

Component	Result	Code	Units
Metolachlor	0.50	U	ng/L
Metribuzin	0.75	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P360773

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: P360937

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: P360950

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361324

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

Reference Method: SM 2540 C-97
Batch ID: P361411

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361415

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361055

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: P361042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	107		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	106		P	85 - 115
Sodium	109		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	96.7		P	85 - 115
Arsenic	103		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	94.9		P	85 - 115
Copper	101		P	85 - 115
Lead	97.5		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Silver	102		P	85 - 115
Thallium	98.9		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

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: P361161

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: P361048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

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

Reference Method: EPA 8270D
Batch ID: P360892

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P360892

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

Reference Method: EPA 8321B
Batch ID: P360773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	87.3		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	148		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	122		P	40 - 150
Ibuprofen	63.6		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	134		P	40 - 150
Linuron	80.6		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	71.0		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	72.3		P	40 - 150
Triclopyr	62.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.4		P	40 - 150
AMPA	129		P	40 - 150
Endothall	63.2		P	40 - 150
Glufosinate	129		P	40 - 150
Glyphosate	134		P	40 - 140
Sucralose	97.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P361324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071612	Barium	99.6		P	80 - 120
2071612	Calcium	103		P	80 - 120
2071612	Iron	106		P	80 - 120
2071612	Magnesium	103		P	80 - 120
2071612	Potassium	108		P	80 - 120
2071612	Sodium	110		P	80 - 120
2071612	Zinc	99.4		P	80 - 120
2071886	Barium	99.8	98.9	P/P	80 - 120
2071886	Calcium	99.6		P	80 - 120
2071886	Iron	106	104	P/P	80 - 120
2071886	Magnesium	101		P	80 - 120
2071886	Potassium	105	99.2	P/P	80 - 120
2071886	Sodium	108	99.2	P/P	80 - 120
2071886	Zinc	99.8	99.4	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071612	Aluminum	99.2		P	80 - 120
2071612	Antimony	98.2		P	80 - 120
2071612	Arsenic	101		P	80 - 120
2071612	Boron	105		P	80 - 120
2071612	Cadmium	104		P	80 - 120
2071612	Chromium	95.4		P	80 - 120
2071612	Copper	98.4		P	80 - 120
2071612	Lead	99.9		P	80 - 120
2071612	Nickel	99.5		P	80 - 120
2071612	Selenium	101		P	80 - 120
2071612	Silver	102		P	80 - 120
2071612	Thallium	103		P	80 - 120
2071886	Aluminum	98.7	98.9	P/P	80 - 120
2071886	Antimony	100	98.2	P/P	80 - 120
2071886	Arsenic	102	101	P/P	80 - 120
2071886	Boron	103	104	P/P	80 - 120
2071886	Cadmium	105	104	P/P	80 - 120
2071886	Chromium	95.3	96.4	P/P	80 - 120
2071886	Copper	98.0	97.7	P/P	80 - 120
2071886	Lead	101	98.9	P/P	80 - 120
2071886	Nickel	99.1	99.7	P/P	80 - 120
2071886	Selenium	99.8	100	P/P	80 - 120
2071886	Silver	103	103	P/P	80 - 120
2071886	Thallium	105	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071869	Chloride	91.7		P	90 - 110
2072017	Chloride	98.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071869	Sulfate	92.5		P	90 - 110
2072017	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072025	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071938	Kjeldahl Nitrogen	100	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071902	NO2NO3-N	96.1	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072019	Total-P	94.0	91.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072181	O-Phosphate-P	96.4	96.9	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360892

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P360892

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

Reference Method: EPA 8321B
Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	2,4-D	68.7	89.6	P/P	40 - 150
2071546	Acetaminophen	137	128	P/P	30 - 150
2071546	Bentazon	100	94.2	P/P	30 - 150
2071546	Carbamazepine	114	103	P/P	40 - 150
2071546	Diuron	99.9	102	P/P	40 - 150
2071546	Fenuron	144	138	P/P	40 - 150
2071546	Fluridone	118	114	P/P	40 - 150
2071546	Hydrocodone	102	109	P/P	40 - 150
2071546	Ibuprofen	65.8	65.5	P/P	40 - 150
2071546	Imazapyr	113	98.6	P/P	40 - 150
2071546	Imidacloprid	184	174	F/F	40 - 150
2071546	Linuron	90.5	85.2	P/P	40 - 150
2071546	MCP	114	105	P/P	40 - 150
2071546	Naproxen	99.4	87.0	P/P	40 - 150
2071546	Primidone	122	94.3	P/P	40 - 150
2071546	Pyraclostrobin	107	108	P/P	40 - 150
2071546	Triclopyr	62.1	58.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071724	Acesulfame K	101	87.6	P/P	40 - 150
2071724	AMPA	105	111	P/P	40 - 150
2071724	Endothall	111	123	P/P	40 - 150
2071724	Glufosinate	132	122	P/P	40 - 150
2071724	Glyphosate	131	131	P/P	40 - 140
2071724	Sucralose	73.3	71.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072023	Fluoride	103	104	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071901	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071898	Turbidity	0.760	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071886	Barium	0.864	Spike	P	0 - 20
2071886	Calcium	4.30	Spike	P	0 - 20
2071886	Iron	1.92	Spike	P	0 - 20
2071886	Magnesium	1.78	Spike	P	0 - 20
2071886	Potassium	5.39	Spike	P	0 - 20
2071886	Sodium	4.42	Spike	P	0 - 20
2071886	Zinc	0.365	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071886	Aluminum	0.239	Spike	P	0 - 20
2071886	Antimony	1.96	Spike	P	0 - 20
2071886	Arsenic	1.03	Spike	P	0 - 20
2071886	Boron	0.832	Spike	P	0 - 20
2071886	Cadmium	1.27	Spike	P	0 - 20
2071886	Chromium	1.11	Spike	P	0 - 20
2071886	Copper	0.179	Spike	P	0 - 20
2071886	Lead	2.19	Spike	P	0 - 20
2071886	Nickel	0.597	Spike	P	0 - 20
2071886	Selenium	0.290	Spike	P	0 - 20
2071886	Silver	0.0344	Spike	P	0 - 20
2071886	Thallium	0.537	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071869	Chloride	15.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071869	Sulfate	15.4	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072025	Ammonia-N	0.0911	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071938	Kjeldahl Nitrogen	3.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071902	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072019	Total-P	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072181	O-Phosphate-P	0.494	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P360892

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

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360892

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

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360892

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

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	2,4-D	26.4	Spike	P	0 - 30
2071546	Acetaminophen	6.76	Spike	P	0 - 30
2071546	Bentazon	5.99	Spike	P	0 - 30
2071546	Carbamazepine	10.1	Spike	P	0 - 30
2071546	Diuron	1.87	Spike	P	0 - 30
2071546	Fenuron	3.97	Spike	P	0 - 30
2071546	Fluridone	2.86	Spike	P	0 - 30
2071546	Hydrocodone	5.95	Spike	P	0 - 30
2071546	Ibuprofen	0.352	Spike	P	0 - 30
2071546	Imazapyr	13.9	Spike	P	0 - 30
2071546	Imidacloprid	5.26	Spike	P	0 - 30
2071546	Linuron	5.94	Spike	P	0 - 30
2071546	MCP	7.83	Spike	P	0 - 30
2071546	Naproxen	13.3	Spike	P	0 - 30
2071546	Primidone	25.9	Spike	P	0 - 30
2071546	Pyraclostrobin	0.860	Spike	P	0 - 30
2071546	Triclopyr	5.22	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071724	Acesulfame K	14.1	Spike	P	0 - 30
2071724	AMPA	4.88	Spike	P	0 - 30
2071724	Endothall	10.7	Spike	P	0 - 30
2071724	Glufosinate	8.01	Spike	P	0 - 30
2071724	Glyphosate	0.183	Spike	P	0 - 30
2071724	Sucralose	2.38	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P360950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071987	Color (true)	0.442	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Total Alkalinity	3.79	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072024	TDS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Fluoride	0.484	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P361055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071901	Organic Carbon	0.128	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: 2071994
Field Sample ID: 19010085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.9	P	30 - 160
EPA 8321B	Diuron-d6	61.7	P	30 - 160
EPA 8321B	Endothall-d6	72.1	P	30 - 160
EPA 8321B	Endothall-d6	72.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.4	P	30 - 160
EPA 8321B	Primidone-d5	56.3	P	30 - 160
EPA 8321B	Sucralose-d6	55.7	P	30 - 160
EPA 8321B	Sucralose-d6	55.7	P	30 - 160

Lab Sample ID: 2071996
Field Sample ID: 19010085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	97.7	P	68 - 130
EPA 8270D	Terbufos-d10	108	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90192

Included Lab Sample IDs: 2071987

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90194

Included Lab Sample IDs: 2071989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90211

Included Lab Sample IDs: 2071987

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

Reference Method: EPA 8321B

Run ID: A90220

Included Lab Sample IDs: 2071994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	135	117	P/P	60 - 160
Glufosinate	134	122	P/P	60 - 160
Glyphosate	133	148	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90234

Included Lab Sample IDs: 2071988

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

Reference Method: SM 5310 B-00

Run ID: A90237

Included Lab Sample IDs: 2071988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90259

Included Lab Sample IDs: 2071987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	104	P/P	90 - 110
Sulfate	107	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A90265
Included Lab Sample IDs: 2071994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	60.2	69.7	P/P	60 - 160
Endothall	88.4	79.1	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A90274
Included Lab Sample IDs: 2071994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	92.9	P/P	50 - 150
Acetaminophen	92.7	123	P/P	60 - 160
Bentazon	91.8	80.6	P/P	50 - 160
Carbamazepine	91.9	110	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Fenuron	109	106	P/P	60 - 150
Fluridone	93.4	69.9	P/P	60 - 160
Hydrocodone	99.1	114	P/P	60 - 150
Ibuprofen	108	86.4	P/P	50 - 160
Imazapyr	83.8	85.8	P/P	50 - 150
Imidacloprid	106	95.3	P/P	60 - 150
Linuron	104	85.8	P/P	60 - 150
MCPP	96.6	92.9	P/P	50 - 150
Naproxen	125	84.5	P/P	50 - 160
Primidone	135	112	P/P	60 - 150
Pyraclostrobin	87.3	89.2	P/P	60 - 150
Triclopyr	101	98.2	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90282
Included Lab Sample IDs: 2071995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.6	99.3	P/P	90 - 110
Calcium	102	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	99.9	99.6	P/P	90 - 110
Sodium	103	104	P/P	90 - 110
Zinc	100	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90298
Included Lab Sample IDs: 2071988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90315
Included Lab Sample IDs: 2071988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90315

Included Lab Sample IDs: 2071988

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: A90320

Included Lab Sample IDs: 2071988

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90333

Included Lab Sample IDs: 2071995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.4	99.5	P/P	90 - 110
Antimony	96.3	95.5	P/P	90 - 110
Boron	104	104	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	99.7	99.0	P/P	90 - 110
Lead	99.8	98.5	P/P	90 - 110
Nickel	99.6	99.4	P/P	90 - 110
Selenium	98.4	98.5	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.7	93.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90337

Included Lab Sample IDs: 2071987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90337

Included Lab Sample IDs: 2071987

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

Reference Method: EPA 8270D

Run ID: A90343

Included Lab Sample IDs: 2071996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	104		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	86.6		P	80 - 120
Atrazine	98.5		P	80 - 120
Atrazine Desethyl	94.9		P	80 - 120
Azinphos Methyl	90.2		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
 Run ID: A90343
 Included Lab Sample IDs: 2071996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromacil	106		P	80 - 120
Butylate	99.6		P	80 - 120
Chlorpyrifos Ethyl	98.2		P	80 - 120
Chlorpyrifos Methyl	102		P	80 - 120
Cyanazine	95.0		P	80 - 120
Demeton	91.5		P	80 - 120
Diazinon	97.8		P	80 - 120
Dimethenamid	105		P	80 - 120
Disulfoton	92.7		P	80 - 120
Dithiopyr	101		P	80 - 120
EPTC	101		P	80 - 120
Ethion	92.6		P	80 - 120
Ethoprop	95.4		P	80 - 120
Fenamiphos	92.8		P	80 - 120
Fipronil	99.8		P	80 - 120
Fipronil Desulfinyl	107		P	80 - 120
Fipronil Sulfide	93.6		P	80 - 120
Fipronil Sulfone	100		P	80 - 120
Fonofos	91.4		P	80 - 120
Hexazinone	96.0		P	80 - 120
Malathion	98.1		P	80 - 120
Metalaxyl	102		P	80 - 120
Metolachlor	108		P	80 - 120
Metribuzin	89.1		P	80 - 120
Mevinphos	99.5		P	80 - 120
Molinate	101		P	80 - 120
Norflurazon	113		P	80 - 120
Oxadiazon	108		P	80 - 120
Parathion Ethyl	97.2		P	80 - 120
Parathion Methyl	87.9		P	80 - 120
Pendimethalin	96.6		P	80 - 120
Phorate	96.4		P	80 - 120
Prodiamine	95.2		P	80 - 120
Prometon	114		P	80 - 120
Prometryn	110		P	80 - 120
Simazine	88.5		P	80 - 120
Tebuconazole	106		P	80 - 120
Terbufos	92.3		P	80 - 120
Terbutylazine	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A90422
 Included Lab Sample IDs: 2071995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.4	97.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A90433
Included Lab Sample IDs: 2071994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.7	86.9	P/P	60 - 160

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							0.760	
EPA 200.7 Rev. 4.4	Barium	102		99.6	99.8	98.9			0.864
	Calcium	103		103	99.6				4.30
	Iron	107		106	106	104			1.92
	Magnesium	102		103	101				1.78
	Potassium	106		108	105	99.2			5.39
	Sodium	109		110	108	99.2			4.42
	Zinc	102		99.4	99.8	99.4			0.365
EPA 200.8 Rev. 5.4	Aluminum	100		99.2	98.7	98.9			0.239
	Antimony	96.7		98.2	100	98.2			1.96
	Arsenic	103		101	102	101			1.03
	Boron	99.4		105	103	104			0.832
	Cadmium	102		104	105	104			1.27
	Chromium	94.9		95.4	95.3	96.4			1.11
	Copper	101		98.4	98.0	97.7			0.179
	Lead	97.5		99.9	101	98.9			2.19
	Nickel	101		99.5	99.1	99.7			0.597
	Selenium	102		101	99.8	100			0.290
	Silver	102		102	103	103			0.0344
	Thallium	98.9		103	105	104			0.537
EPA 300.0 Rev. 2.1	Chloride	102		91.7	98.6			15.3	
	Sulfate	104		92.5	100			15.4	
EPA 350.1 Rev. 2.0	Ammonia-N	102		103	103				0.0911
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		100	107				3.55
EPA 353.2 Rev. 2.0	NO2NO3-N	100		96.1	95.6				0.496
EPA 365.1 Rev. 2.0	Total-P	101		94.0	91.9				1.14
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104		96.4	96.9				0.494
EPA 8270D	Acetochlor	96.5	116	102	108		18.2		6.42
	Alachlor	96.7	109				12.1		9.62
	Ametryn	82.8	91.0	105	103		9.43		2.26
	Atrazine	98.8	105	96.4	114		5.81		15.0
	Atrazine Desethyl	109	97.1	101	138		11.6		30.8
	Azinphos Methyl	119	116	121	138		2.14		13.2
	Bromacil	73.5	89.5	94.4	88.5		19.6		6.35
	Butylate	59.4	60.9	38.9	34.6		2.55		11.7
	Chlorpyrifos Ethyl	91.2	92.9	93.2	128		1.91		31.2
	Chlorpyrifos Methyl	113	97.9	111	103		13.9		7.57
	Cyanazine	126	108	131	97.9		15.2		29.3
	Demeton	80.4	72.8	150	73.1		9.89		69.2
	Diazinon	101	108	90.6	95.8		6.70		5.60
	Dimethenamid	96.9	117	55.1	103		18.6		60.4
	Disulfoton	94.4	80.0	167	90.2		16.5		59.4
	Dithiopyr	95.3	113	99.5	103		17.2		3.30
	EPTC	59.8	69.1	56.3	40.6		14.4		32.5
	Ethion	79.5	88.4	117	94.3		10.6		21.4
	Ethoprop	88.7	88.5	286	88.0		0.123		106
	Fenamiphos	85.5	90.8	132	91.4		5.97		36.5
	Fipronil	100	116	111	111		14.6		0.0384
	Fipronil Desulfinyl	90.6	105	97.1	98.4		14.5		1.27
	Fipronil Sulfide	90.6	94.8	110	103		4.57		6.63
	Fipronil Sulfone	78.8	90.7	100	98.4		14.0		1.78
	Fonofos	86.6	78.7	83.1	101		9.59		19.6
	Hexazinone	92.7	110	101	101		17.5		0.344
	Malathion	105	125	130	108		17.2		18.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	96.9	106	101	89.8	8.85	11.5
	Metolachlor	87.7	107			20.1	13.3
	Metribuzin	173	112	134	182	42.8	22.0
	Mevinphos	91.6	100	102	220	9.23	73.5
	Molinate	70.0	72.8	57.6	87.7	3.90	41.5
	Norflurazon	102	119	109	106	15.4	3.28
	Oxadiazon	92.4	101	89.9	107	8.56	17.5
	Parathion Ethyl	85.1	89.7	90.7	88.3	5.23	2.63
	Parathion Methyl	107	99.7	109	120	6.65	9.89
	Pendimethalin	85.3	84.2	88.6	85.3	1.26	3.71
	Phorate	87.2	68.9	92.0	7090	23.5	195
	Prodiamine	67.6	81.6	110	108	18.7	1.57
	Prometon	88.8	108	94.9	93.5	19.4	1.49
	Prometryn	93.4	102	92.8	107	8.67	14.4
	Simazine	110	101	109	83.8	8.54	25.7
	Tebuconazole	77.2	113	110	82.9	37.3	26.4
	Terbufos	89.1	79.1	85.7	103	11.9	18.6
	Terbuthylazine	91.7	91.3	91.8	93.9	0.451	2.24
EPA 8321B	2,4-D	84.1		68.7	89.6		26.4
	Acesulfame K	85.4		101	87.6		14.1
	Acetaminophen	106		137	128		6.76
	AMPA	129		105	111		4.88
	Bentazon	113		100	94.2		5.99
	Carbamazepine	87.3		114	103		10.1
	Diuron	103		99.9	102		1.87
	Endothall	63.2		111	123		10.7
	Fenuron	148		144	138		3.97
	Fluridone	114		118	114		2.86
	Glufosinate	129		132	122		8.01
	Glyphosate	134		131	131		0.183
	Hydrocodone	122		102	109		5.95
	Ibuprofen	63.6		65.8	65.5		0.352
	Imazapyr	104		113	98.6		13.9
	Imidacloprid	134		184	174		5.26
	Linuron	80.6		90.5	85.2		5.94
	MCPP	112		114	105		7.83
	Naproxen	71.0		99.4	87.0		13.3
	Primidone	114		122	94.3		25.9
	Pyraclostrobin	72.3		107	108		0.860
	Sucralose	97.4		73.3	71.5		2.38
	Triclopyr	62.3		62.1	58.9		5.22
SM 2120 B	Color (true)	103				0.442	
SM 2320 B-97	Total Alkalinity	98.4				3.79	
SM 2540 C-97	TDS					6.06	
SM 4500 F-C-97	Fluoride	100		103	104		0.484
SM 5310 B-00	Organic Carbon	98.6		101	101		0.128

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2071987

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	2071995
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2071995
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2071987
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2071987
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2071988
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2071988
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2071988
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2071988
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2071989
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2071996
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2071994
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2071994
SM 2120 B / E31780	True Color measured at 450 nm	2071987
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2071987
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2071987
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2071987
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2071987
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2071988

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/22/2019			03/22/2019 14:19	Adrian Shelby	2071987
EPA 200.7 Rev. 4.4	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/27/2019 15:26	Betina Topolski	2071995
EPA 200.8 Rev. 5.4	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/29/2019 21:24	Robert K Palmer	2071995
	03/22/2019	03/26/2019 14:35	Elliott D. Healy	04/03/2019 15:37	Robert K Palmer	2071995
EPA 300.0 Rev. 2.1	03/22/2019			03/28/2019 06:35	Lipi Saha	2071987
EPA 350.1 Rev. 2.0	03/22/2019			03/28/2019 12:47	Ping Hua	2071988
EPA 351.2 Rev. 2.0	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 11:00	Joseph Suarez	2071988
EPA 353.2 Rev. 2.0	03/22/2019			03/26/2019 10:27	Lauren Lees	2071988
EPA 365.1 Rev. 2.0	03/22/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:50	Rosalyn Ballman	2071988
EPA 365.1 Rev. 2.0 dissolved	03/22/2019			03/22/2019 15:03	Julia Storbeck	2071989
EPA 8270D	03/22/2019	03/27/2019 08:00	Fe-Val Siddell	03/28/2019 18:14	Vandana T. Nagar	2071996
EPA 8321B	03/22/2019	03/25/2019 09:45	Rebecca Ware	03/25/2019 12:58	Rebecca Ware	2071994
	03/22/2019	03/25/2019 09:45	Rebecca Ware	03/27/2019 11:10	Rebecca Ware	2071994
	03/22/2019	03/25/2019 09:45	Rebecca Ware	04/01/2019 19:06	Rebecca Ware	2071994
	03/22/2019	03/26/2019 12:30	Hoor Shaik	03/28/2019 01:58	Juyoung Kim	2071994
SM 2120 B	03/22/2019			03/22/2019 16:19	Blanca Fach	2071987
SM 2320 B-97	03/22/2019			03/30/2019 08:11	Samantha Davila	2071987
SM 2540 C-97	03/22/2019			03/27/2019 14:03	Yijie Li	2071987
SM 2540 D-97	03/22/2019			03/27/2019 14:03	Yijie Li	2071987
SM 4500 F-C-97	03/22/2019			03/30/2019 08:11	Samantha Davila	2071987
SM 5310 B-00	03/22/2019			03/26/2019 01:28	Julia Storbeck	2071988