

Chemical Analysis Report

NE-DIST-2019-02-28-01

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

Event Description: **SCI 2407 Grog, 2246 Jones**
Request ID: **RQ-2019-02-25-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-MAR-2019 16:08

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: GROG BRANCH AT LONG BAY RD.

Collection Date/Time: 02/27/2019 09:30

Field ID: 20030833

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065948	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P359713	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P360204	
		Sulfate	3.6		mg SO4/L	P360209	
	SM 2120 B	Color (true)	150		PCU	P359709	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P360161	
	SM 2540 C-97	TDS	83		mg/L	P360003	
	SM 2540 D-97	TSS	2	U	mg/L	P359853	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P360164	
2065949	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P360053	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P359837	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P359827	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P359754	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P360190	
2065950	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P359719	
2065954	EPA 8321B	2,4-D	0.0020	U	ug/L	P359682	
		Acesulfame K**	0.39	I	ug/L	P359705	
		AMPA**	0.10	U	ug/L	P359705	RPD
		Sucralose**	0.55		ug/L	P359705	
		Acetaminophen**	0.0080	U	ug/L	P359682	
		Endothall**	0.25	U	ug/L	P359705	
		Glufosinate**	0.10	U	ug/L	P359705	
		Bentazon	8.0E-04	U	ug/L	P359682	
		Glyphosate**	0.10	U	ug/L	P359705	
		Carbamazepine**	8.0E-04	U	ug/L	P359682	
		Diuron	0.0020	U	ug/L	P359682	
		Fenuron	0.016	U	ug/L	P359682	
		Fluridone**	8.0E-04	U	ug/L	P359682	
		Imazapyr**	0.0050	I	ug/L	P359682	
		Hydrocodone**	0.0020	U	ug/L	P359682	
		Ibuprofen**	0.020	U	ug/L	P359682	
		Imidacloprid	0.0020	U	ug/L	P359682	MS
		Linuron	0.0040	U	ug/L	P359682	
		MCPP	0.0020	U	ug/L	P359682	
		Naproxen**	0.0080	U	ug/L	P359682	
		Primidone**	0.012	I	ug/L	P359682	
		Pyraclostrobin**	0.0020	U	ug/L	P359682	
		Triclopyr**	0.0040	U	ug/L	P359682	
2065955	EPA 200.7 Rev. 4.4	Barium	13.2		ug/L	P359847	
		Calcium	7.63		mg/L	P359847	
		Iron	930		ug/L	P359847	
		Magnesium	2.23		mg/L	P359847	
		Potassium	0.62	I	mg/L	P359847	
		Sodium	12.8		mg/L	P359847	

Field ID: 20030833

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065955	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P359847	
		Aluminum	199		ug/L	P359847	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P359847	
		Arsenic	0.64		ug/L	P359847	
		Boron**	25.0		ug/L	P359847	
		Cadmium	0.020	U	ug/L	P359847	
		Chromium	0.59	I	ug/L	P359847	
		Copper	0.40	U	ug/L	P359847	
		Lead	0.25	I	ug/L	P359847	
		Nickel	0.50	U	ug/L	P359847	
		Selenium	0.20	U	ug/L	P359847	
		Silver	0.010	U	ug/L	P359847	
		Thallium	0.10	U	ug/L	P359847	
2065956	EPA 8270D	Acetochlor	0.25	U	ng/L	P359947	
		Alachlor	0.25	U	ng/L	P359947	
		Ametryn	0.61	U	ng/L	P359947	
		Atrazine	0.25	U	ng/L	P359947	
		Atrazine Desethyl	1.5	U	ng/L	P359947	
		Azinphos Methyl	5.1	U	ng/L	P359947	
		Bromacil	0.51	UJ	ng/L	P359947	RPD
		Butylate	0.41	UJ	ng/L	P359947	LCS
		Chlorpyrifos Ethyl	0.25	U	ng/L	P359947	
		Chlorpyrifos Methyl	0.10	U	ng/L	P359947	
		Cyanazine	3.3	U	ng/L	P359947	
		Demeton	7.1	U	ng/L	P359947	
		Diazinon	0.13	U	ng/L	P359947	
		Dimethenamid**	0.10	U	ng/L	P359947	
		Disulfoton	0.51	U	ng/L	P359947	
		Dithiopyr**	0.10	U	ng/L	P359947	
		EPTC	1.3	U	ng/L	P359947	RPD
		Ethion	0.15	U	ng/L	P359947	
		Ethoprop	0.10	U	ng/L	P359947	
		Fenamiphos	0.51	U	ng/L	P359947	
		Fipronil	0.25	U	ng/L	P359947	
		Fipronil Desulfinyl**	0.13	U	ng/L	P359947	
		Fipronil Sulfide	0.15	U	ng/L	P359947	
		Fipronil Sulfone	0.15	U	ng/L	P359947	
		Fonofos	0.20	U	ng/L	P359947	
		Hexazinone	0.51	U	ng/L	P359947	
		Malathion	0.36	U	ng/L	P359947	
		Metalaxyl	0.30	U	ng/L	P359947	
		Metolachlor	0.51	U	ng/L	P359947	
		Metribuzin	0.76	UJ	ng/L	P359947	RPD
		Mevinphos	0.51	U	ng/L	P359947	
		Molinate	0.30	U	ng/L	P359947	

Field ID: 20030833

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065956	EPA 8270D	Norflurazon	0.51	U	ng/L	P359947	
		Oxadiazon**	0.39	I	ng/L	P359947	
		Parathion Ethyl	0.25	U	ng/L	P359947	
		Parathion Methyl	0.56	U	ng/L	P359947	
		Pendimethalin	2.7	I	ng/L	P359947	
		Phorate	0.25	U	ng/L	P359947	
		Prodiamine**	0.18	U	ng/L	P359947	
		Prometon	0.91	U	ng/L	P359947	
		Prometryn	0.20	U	ng/L	P359947	
		Simazine	0.51	U	ng/L	P359947	
		Tebuconazole**	0.51	UJ	ng/L	P359947	RPD
		Terbufos	0.10	U	ng/L	P359947	
		Terbutylazine	0.43	U	ng/L	P359947	

Ref. Method and Comment:

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: 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: P359713

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359847

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: P359847

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: P360204

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360209

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360053

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: P359837

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359827

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359754

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359719

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

Reference Method: EPA 8270D
Batch ID: P359947

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: P359947

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: P359682

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: P359705

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: P359709

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360161

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

Reference Method: SM 2540 C-97
Batch ID: P360003

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359853

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360164

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360190

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: P359847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	108		P	85 - 115
Magnesium	113		P	85 - 115
Potassium	107		P	85 - 115
Sodium	109		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	99.4		P	85 - 115
Arsenic	105		P	85 - 115
Boron	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	102		P	85 - 115
Copper	107		P	85 - 115
Lead	103		P	85 - 115
Nickel	103		P	85 - 115
Selenium	102		P	85 - 115
Silver	103		P	85 - 115
Thallium	96.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360204

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360209

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360053

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359827

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: P359754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359719

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

Reference Method: EPA 8270D
 Batch ID: P359947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	112	109	P/P	71 - 121
Alachlor	109	96.4	P/P	72 - 119
Ametryn	112	110	P/P	47 - 144
Atrazine	103	101	P/P	75 - 123
Atrazine Desethyl	98.8	89.1	P/P	45 - 133
Azinphos Methyl	96.2	110	P/P	66 - 165
Bromacil	108	55.0	P/P	43 - 123
Butylate	84.6	65.3	F/P	27 - 83.0
Chlorpyrifos Ethyl	93.8	95.0	P/P	70 - 117
Chlorpyrifos Methyl	84.6	94.8	P/P	71 - 120
Cyanazine	99.0	94.0	P/P	34 - 264
Demeton	80.6	86.5	P/P	41 - 122
Diazinon	110	98.6	P/P	70 - 127
Dimethenamid	112	101	P/P	60 - 130
Disulfoton	87.8	94.8	P/P	56 - 127
Dithiopyr	110	97.0	P/P	60 - 130
EPTC	81.0	72.2	P/P	24 - 84.0
Ethion	103	77.8	P/P	53 - 132
Ethoprop	104	90.7	P/P	57 - 117
Fenamiphos	94.6	86.1	P/P	55 - 136
Fipronil	108	84.0	P/P	64 - 126
Fipronil Desulfinyl	99.4	88.7	P/P	60 - 130
Fipronil Sulfide	102	82.0	P/P	57 - 120
Fipronil Sulfone	104	82.7	P/P	52 - 115
Fonofos	87.6	93.1	P/P	61 - 121
Hexazinone	130	96.6	P/P	62 - 131
Malathion	98.5	97.9	P/P	67 - 126
Metalaxyl	111	98.0	P/P	54 - 128
Metolachlor	112	103	P/P	71 - 118
Metribuzin	86.2	145	P/P	42 - 221
Mevinphos	94.7	88.9	P/P	45 - 114
Molinate	84.4	76.6	P/P	33 - 91.0
Norflurazon	105	85.6	P/P	60 - 123
Oxadiazon	113	95.8	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P359947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	90.5	91.0	P/P	73 - 111
Parathion Methyl	96.6	117	P/P	74 - 126
Pendimethalin	88.6	93.6	P/P	63 - 131
Phorate	81.6	89.4	P/P	54 - 115
Prodiamine	93.6	91.8	P/P	60 - 130
Prometon	107	83.6	P/P	61 - 120
Prometryn	107	94.7	P/P	62 - 126
Simazine	101	105	P/P	75 - 126
Tebuconazole	100	73.9	P/P	30 - 100
Terbufos	89.7	91.5	P/P	65 - 116
Terbuthylazine	106	98.0	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P359682

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.4		P	40 - 150
Acetaminophen	101		P	30 - 150
Bentazon	133		P	30 - 150
Carbamazepine	96.0		P	40 - 150
Diuron	82.8		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	109		P	40 - 150
Hydrocodone	110		P	40 - 150
Ibuprofen	76.6		P	40 - 150
Imazapyr	109		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	73.1		P	40 - 150
MCPP	99.1		P	40 - 150
Naproxen	81.0		P	40 - 150
Primidone	96.5		P	40 - 150
Pyraclostrobin	76.2		P	40 - 150
Triclopyr	60.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	120		P	40 - 150
AMPA	87.3		P	40 - 150
Endothall	100		P	40 - 150
Glufosinate	135		P	40 - 150
Glyphosate	123		P	40 - 140
Sucralose	97.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P360161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066045	Barium	99.8		P	80 - 120
2066045	Calcium	99.4		P	80 - 120
2066045	Iron	107		P	80 - 120
2066045	Magnesium	98.1		P	80 - 120
2066045	Potassium	106		P	80 - 120
2066045	Sodium	102		P	80 - 120
2066045	Zinc	99.2		P	80 - 120
2066323	Barium	100	101	P/P	80 - 120
2066323	Calcium	104		P	80 - 120
2066323	Iron	107	107	P/P	80 - 120
2066323	Magnesium	108	108	P/P	80 - 120
2066323	Potassium	110	109	P/P	80 - 120
2066323	Sodium	109	106	P/P	80 - 120
2066323	Zinc	101	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066045	Aluminum	102		P	80 - 120
2066045	Antimony	104		P	80 - 120
2066045	Arsenic	108		P	80 - 120
2066045	Boron	106		P	80 - 120
2066045	Cadmium	105		P	80 - 120
2066045	Chromium	103		P	80 - 120
2066045	Copper	105		P	80 - 120
2066045	Lead	105		P	80 - 120
2066045	Nickel	101		P	80 - 120
2066045	Selenium	104		P	80 - 120
2066045	Silver	102		P	80 - 120
2066045	Thallium	102		P	80 - 120
2066323	Aluminum	96.9	98.1	P/P	80 - 120
2066323	Antimony	101	103	P/P	80 - 120
2066323	Arsenic	107	108	P/P	80 - 120
2066323	Boron	98.3	99.6	P/P	80 - 120
2066323	Cadmium	103	104	P/P	80 - 120
2066323	Chromium	103	104	P/P	80 - 120
2066323	Copper	105	107	P/P	80 - 120
2066323	Lead	105	106	P/P	80 - 120
2066323	Nickel	103	105	P/P	80 - 120
2066323	Selenium	102	103	P/P	80 - 120
2066323	Silver	101	103	P/P	80 - 120
2066323	Thallium	100	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065922	Chloride	105		P	90 - 110
2066095	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P360209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065922	Sulfate	103		P	90 - 110
2066095	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P360053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065941	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065949	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065924	Total-P	99.6	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065885	O-Phosphate-P	97.0	97.4	P/P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P359947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065382	Acetochlor	107	106	P/P	63 - 129
2065382	Alachlor	106	103	P/P	65 - 127
2065382	Ametryn	102	98.6	P/P	40 - 164
2065382	Atrazine	108	119	P/P	66 - 135
2065382	Atrazine Desethyl	89.1	77.1	P/P	14 - 157
2065382	Azinphos Methyl	133	124	P/P	49 - 180
2065382	Bromacil	91.8	88.4	P/P	48 - 130
2065382	Butylate	63.3	48.6	P/P	10 - 94.0
2065382	Chlorpyrifos Ethyl	88.6	99.9	P/P	58 - 123
2065382	Chlorpyrifos Methyl	92.5	95.3	P/P	58 - 125
2065382	Cyanazine	97.4	109	P/P	24 - 253
2065382	Demeton	89.6	90.9	P/P	25 - 149
2065382	Diazinon	101	102	P/P	59 - 144
2065382	Dimethenamid	103	108	P/P	60 - 130
2065382	Disulfoton	97.8	99.0	P/P	54 - 132
2065382	Dithiopyr	100	101	P/P	60 - 130
2065382	EPTC	65.1	45.8	P/P	10 - 92.0
2065382	Ethion	49.7	60.1	P/P	30 - 148
2065382	Ethoprop	100	97.1	P/P	50 - 130
2065382	Fenamiphos	105	78.5	P/P	49 - 142
2065382	Fipronil	89.5	96.9	P/P	46 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P359947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065382	Fipronil Desulfinyl	73.0	76.3	P/P	60 - 130
2065382	Fipronil Sulfide	80.9	82.0	P/P	31 - 136
2065382	Fipronil Sulfone	81.5	92.3	P/P	16 - 136
2065382	Fonofos	96.1	100	P/P	55 - 129
2065382	Hexazinone	91.2	95.0	P/P	56 - 141
2065382	Malathion	92.5	96.9	P/P	56 - 135
2065382	Metalaxyl	97.4	98.1	P/P	54 - 135
2065382	Metolachlor	109	110	P/P	51 - 140
2065382	Metribuzin	149	150	P/P	45 - 254
2065382	Mevinphos	82.6	91.0	P/P	33 - 131
2065382	Molinate	85.2	75.0	P/P	14 - 98.0
2065382	Norflurazon	97.4	98.2	P/P	34 - 136
2065382	Oxadiazon	88.6	90.4	P/P	60 - 130
2065382	Parathion Ethyl	88.9	92.9	P/P	66 - 118
2065382	Parathion Methyl	120	124	P/P	64 - 136
2065382	Pendimethalin	71.9	71.8	P/P	59 - 144
2065382	Phorate	96.7	91.8	P/P	42 - 130
2065382	Prodiamine	89.6	80.9	P/P	60 - 130
2065382	Prometon	85.0	81.5	P/P	59 - 134
2065382	Prometryn	88.1	88.0	P/P	54 - 135
2065382	Simazine	105	111	P/P	53 - 156
2065382	Tebuconazole	64.3	72.1	P/P	30 - 100
2065382	Terbufos	99.4	99.0	P/P	57 - 131
2065382	Terbutylazine	96.9	98.5	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P359682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065893	2,4-D	96.8	89.0	P/P	40 - 150
2065893	Acetaminophen	118	107	P/P	30 - 150
2065893	Bentazon	116	110	P/P	30 - 150
2065893	Carbamazepine	98.9	92.1	P/P	40 - 150
2065893	Diuron	77.8	77.8	P/P	40 - 150
2065893	Fenuron	120	111	P/P	40 - 150
2065893	Fluridone	108	102	P/P	40 - 150
2065893	Hydrocodone	121	113	P/P	40 - 150
2065893	Ibuprofen	79.4	77.2	P/P	40 - 150
2065893	Imazapyr	126	115	P/P	40 - 150
2065893	Imidacloprid	157	151	F/F	40 - 150
2065893	Linuron	80.6	74.1	P/P	40 - 150
2065893	MCP	125	112	P/P	40 - 150
2065893	Naproxen	84.2	81.0	P/P	40 - 150
2065893	Primidone	106	98.0	P/P	40 - 150
2065893	Pyraclostrobin	76.4	75.2	P/P	40 - 150
2065893	Triclopyr	59.4	53.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065894	Acesulfame K	120	118	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065894	AMPA	99.1	67.4	P/P	40 - 150
2065894	Endothall	83.4	81.8	P/P	40 - 150
2065894	Glufosinate	119	99.7	P/P	40 - 150
2065894	Glyphosate	122	104	P/P	40 - 140
2065894	Sucralose	96.7	91.8	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065784	Fluoride	97.1	95.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065884	Organic Carbon	95.2	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065875	Turbidity	3.80	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066323	Barium	0.817	Spike	P	0 - 20
2066323	Calcium	0.111	Spike	P	0 - 20
2066323	Iron	0.271	Spike	P	0 - 20
2066323	Magnesium	0.419	Spike	P	0 - 20
2066323	Potassium	1.16	Spike	P	0 - 20
2066323	Sodium	1.54	Spike	P	0 - 20
2066323	Zinc	0.930	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066323	Aluminum	1.29	Spike	P	0 - 20
2066323	Antimony	1.49	Spike	P	0 - 20
2066323	Arsenic	1.10	Spike	P	0 - 20
2066323	Boron	1.15	Spike	P	0 - 20
2066323	Cadmium	1.17	Spike	P	0 - 20
2066323	Chromium	1.11	Spike	P	0 - 20
2066323	Copper	1.82	Spike	P	0 - 20
2066323	Lead	1.17	Spike	P	0 - 20
2066323	Nickel	1.84	Spike	P	0 - 20
2066323	Selenium	1.29	Spike	P	0 - 20
2066323	Silver	1.84	Spike	P	0 - 20
2066323	Thallium	3.54	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065922	Chloride	0.719	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065922	Sulfate	0.683	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065941	Ammonia-N	0.460	Spike	P	0 - 15

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065923	Kjeldahl Nitrogen	1.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065949	NO2NO3-N	0.384	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065924	Total-P	2.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065885	O-Phosphate-P	0.412	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065382	Acetochlor	1.28	Spike	P	0 - 30
2065382	Alachlor	3.28	Spike	P	0 - 30
2065382	Ametryn	3.84	Spike	P	0 - 30
2065382	Atrazine	10.1	Spike	P	0 - 30
2065382	Atrazine Desethyl	14.5	Spike	P	0 - 30
2065382	Azinphos Methyl	6.98	Spike	P	0 - 30
2065382	Bromacil	3.84	Spike	P	0 - 30
2065382	Butylate	26.3	Spike	P	0 - 30
2065382	Chlorpyrifos Ethyl	12.0	Spike	P	0 - 30
2065382	Chlorpyrifos Methyl	2.98	Spike	P	0 - 30
2065382	Cyanazine	11.2	Spike	P	0 - 30
2065382	Demeton	1.42	Spike	P	0 - 30
2065382	Diazinon	1.42	Spike	P	0 - 30
2065382	Dimethenamid	4.83	Spike	P	0 - 30
2065382	Disulfoton	1.27	Spike	P	0 - 30
2065382	Dithiopyr	1.14	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065382	EPTC	34.8	Spike	F	0 - 30
2065382	Ethion	19.0	Spike	P	0 - 30
2065382	Ethoprop	3.38	Spike	P	0 - 30
2065382	Fenamiphos	28.8	Spike	P	0 - 30
2065382	Fipronil	7.95	Spike	P	0 - 30
2065382	Fipronil Desulfinyl	4.40	Spike	P	0 - 30
2065382	Fipronil Sulfide	1.30	Spike	P	0 - 30
2065382	Fipronil Sulfone	12.4	Spike	P	0 - 30
2065382	Fonofos	4.35	Spike	P	0 - 30
2065382	Hexazinone	4.02	Spike	P	0 - 30
2065382	Malathion	4.68	Spike	P	0 - 30
2065382	Metalaxyl	0.716	Spike	P	0 - 30
2065382	Metolachlor	1.24	Spike	P	0 - 30
2065382	Metribuzin	0.341	Spike	P	0 - 30
2065382	Mevinphos	9.75	Spike	P	0 - 30
2065382	Molinate	12.8	Spike	P	0 - 30
2065382	Norflurazon	0.794	Spike	P	0 - 30
2065382	Oxadiazon	2.01	Spike	P	0 - 30
2065382	Parathion Ethyl	4.37	Spike	P	0 - 30
2065382	Parathion Methyl	2.71	Spike	P	0 - 30
2065382	Pendimethalin	0.106	Spike	P	0 - 30
2065382	Phorate	5.18	Spike	P	0 - 30
2065382	Prodiamine	10.2	Spike	P	0 - 30
2065382	Prometon	4.14	Spike	P	0 - 30
2065382	Prometryn	0.0766	Spike	P	0 - 30
2065382	Simazine	6.05	Spike	P	0 - 30
2065382	Tebuconazole	11.4	Spike	P	0 - 30
2065382	Terbufos	0.389	Spike	P	0 - 30
2065382	Terbutylazine	1.62	Spike	P	0 - 30
LFB	Acetochlor	2.61	LCS	P	0 - 30
LFB	Alachlor	12.0	LCS	P	0 - 30
LFB	Ametryn	1.53	LCS	P	0 - 30
LFB	Atrazine	1.95	LCS	P	0 - 30
LFB	Atrazine Desethyl	10.3	LCS	P	0 - 30
LFB	Azinphos Methyl	13.2	LCS	P	0 - 30
LFB	Bromacil	65.1	LCS	F	0 - 30
LFB	Butylate	25.8	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.25	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	11.3	LCS	P	0 - 30
LFB	Cyanazine	5.11	LCS	P	0 - 30
LFB	Demeton	7.02	LCS	P	0 - 30
LFB	Diazinon	11.1	LCS	P	0 - 30
LFB	Dimethenamid	10.5	LCS	P	0 - 30
LFB	Disulfoton	7.62	LCS	P	0 - 30
LFB	Dithiopyr	12.5	LCS	P	0 - 30
LFB	EPTC	11.5	LCS	P	0 - 30
LFB	Ethion	28.3	LCS	P	0 - 30
LFB	Ethoprop	13.4	LCS	P	0 - 30
LFB	Fenamiphos	9.40	LCS	P	0 - 30
LFB	Fipronil	25.4	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	11.4	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	22.0	LCS	P	0 - 30
LFB	Fipronil Sulfone	23.0	LCS	P	0 - 30
LFB	Fonofos	6.10	LCS	P	0 - 30
LFB	Hexazinone	29.3	LCS	P	0 - 30
LFB	Malathion	0.580	LCS	P	0 - 30
LFB	Metalaxyl	12.6	LCS	P	0 - 30
LFB	Metolachlor	7.93	LCS	P	0 - 30
LFB	Metribuzin	51.1	LCS	F	0 - 30
LFB	Mevinphos	6.32	LCS	P	0 - 30
LFB	Molinate	9.68	LCS	P	0 - 30
LFB	Norflurazon	20.8	LCS	P	0 - 30
LFB	Oxadiazon	16.1	LCS	P	0 - 30
LFB	Parathion Ethyl	0.577	LCS	P	0 - 30
LFB	Parathion Methyl	18.7	LCS	P	0 - 30
LFB	Pendimethalin	5.45	LCS	P	0 - 30
LFB	Phorate	9.09	LCS	P	0 - 30
LFB	Prodiamine	1.90	LCS	P	0 - 30
LFB	Prometon	24.5	LCS	P	0 - 30
LFB	Prometryn	12.5	LCS	P	0 - 30
LFB	Simazine	4.64	LCS	P	0 - 30
LFB	Tebuconazole	30.1	LCS	F	0 - 30
LFB	Terbufos	2.01	LCS	P	0 - 30
LFB	Terbuthylazine	7.93	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065893	2,4-D	8.31	Spike	P	0 - 30
2065893	Acetaminophen	9.93	Spike	P	0 - 30
2065893	Bentazon	5.18	Spike	P	0 - 30
2065893	Carbamazepine	7.10	Spike	P	0 - 30
2065893	Diuron	0.0307	Spike	P	0 - 30
2065893	Fenuron	7.31	Spike	P	0 - 30
2065893	Fluridone	5.75	Spike	P	0 - 30
2065893	Hydrocodone	7.03	Spike	P	0 - 30
2065893	Ibuprofen	2.78	Spike	P	0 - 30
2065893	Imazapyr	9.19	Spike	P	0 - 30
2065893	Imidacloprid	3.86	Spike	P	0 - 30
2065893	Linuron	8.48	Spike	P	0 - 30
2065893	MCP	10.8	Spike	P	0 - 30
2065893	Naproxen	3.83	Spike	P	0 - 30
2065893	Primidone	7.84	Spike	P	0 - 30
2065893	Pyraclostrobin	1.54	Spike	P	0 - 30
2065893	Triclopyr	10.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P359705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065894	Acesulfame K	1.98	Spike	P	0 - 30
2065894	AMPA	38.1	Spike	F	0 - 30
2065894	Endothall	1.95	Spike	P	0 - 30
2065894	Glufosinate	17.5	Spike	P	0 - 30
2065894	Glyphosate	15.3	Spike	P	0 - 30
2065894	Sucralose	4.53	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P359709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065881	Color (true)	1.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065784	Total Alkalinity	0.176	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065960	TDS	0.380	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065784	Fluoride	1.45	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065884	Organic Carbon	0.267	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: 2065954
Field Sample ID: 20030833

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.7	P	30 - 160
EPA 8321B	Diuron-d6	67.6	P	30 - 160
EPA 8321B	Endothall-d6	94.5	P	40 - 160
EPA 8321B	Endothall-d6	94.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	53.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	53.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.3	P	30 - 160
EPA 8321B	Primidone-d5	89.4	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2065956
Field Sample ID: 20030833

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	106	P	68 - 130
EPA 8270D	Terbufos-d10	88.8	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A89729
Included Lab Sample IDs: 2065948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A89730
Included Lab Sample IDs: 2065948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A89731
Included Lab Sample IDs: 2065950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A89771
Included Lab Sample IDs: 2065949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A89805
Included Lab Sample IDs: 2065949

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A89812
Included Lab Sample IDs: 2065949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A89813
Included Lab Sample IDs: 2065955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.8	98.7	P/P	95 - 105
Calcium	102	100	P/P	95 - 105
Iron	101	101	P/P	95 - 105
Magnesium	101	101	P/P	95 - 105
Potassium	99.4	98.4	P/P	95 - 105
Sodium	99.9	101	P/P	95 - 105
Zinc	100	99.0	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89836
Included Lab Sample IDs: 2065954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.4	89.0	P/P	50 - 150
Acetaminophen	109	112	P/P	60 - 160
Bentazon	131	129	P/P	50 - 160
Carbamazepine	103	103	P/P	60 - 150
Diuron	112	108	P/P	60 - 150
Fenuron	97.0	102	P/P	60 - 150
Fluridone	99.6	101	P/P	60 - 160
Hydrocodone	104	103	P/P	60 - 150
Ibuprofen	106	107	P/P	50 - 160
Imazapyr	104	108	P/P	50 - 150
Imidacloprid	93.8	89.8	P/P	60 - 150
Linuron	95.4	95.0	P/P	60 - 150
MCPP	96.3	87.0	P/P	50 - 150
Naproxen	105	121	P/P	50 - 160
Primidone	95.6	95.8	P/P	60 - 150
Pyraclostrobin	100	95.3	P/P	60 - 150
Triclopyr	97.6	92.0	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A89843
Included Lab Sample IDs: 2065954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	121	104	P/P	60 - 160
Endothall	100	98.1	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89845
Included Lab Sample IDs: 2065954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	121	64.6	P/P	60 - 160
Glufosinate	108	92.9	P/P	60 - 160
Glyphosate	123	96.3	P/P	60 - 160

Reference Method: EPA 8270D
Run ID: A89854
Included Lab Sample IDs: 2065956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.6		P	80 - 120
Alachlor	100		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine	95.3		P	80 - 120
Atrazine Desethyl	97.7		P	80 - 120
Azinphos Methyl	103		P	80 - 120
Bromacil	98.4		P	80 - 120
Butylate	95.3		P	80 - 120
Chlorpyrifos Ethyl	98.3		P	80 - 120
Chlorpyrifos Methyl	101		P	80 - 120
Cyanazine	89.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A89854
Included Lab Sample IDs: 2065956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Demeton	97.4		P	80 - 120
Diazinon	93.0		P	80 - 120
Dimethenamid	97.8		P	80 - 120
Disulfoton	93.3		P	80 - 120
Dithiopyr	95.3		P	80 - 120
EPTC	96.4		P	80 - 120
Ethion	98.3		P	80 - 120
Ethoprop	100		P	80 - 120
Fenamiphos	94.3		P	80 - 120
Fipronil	95.6		P	80 - 120
Fipronil Desulfinyl	97.3		P	80 - 120
Fipronil Sulfide	96.3		P	80 - 120
Fipronil Sulfone	98.3		P	80 - 120
Fonofos	98.1		P	80 - 120
Hexazinone	99.3		P	80 - 120
Malathion	97.1		P	80 - 120
Metalaxyl	98.3		P	80 - 120
Metolachlor	99.7		P	80 - 120
Metribuzin	86.8		P	80 - 120
Mevinphos	103		P	80 - 120
Molinate	95.9		P	80 - 120
Norflurazon	94.0		P	80 - 120
Oxadiazon	100		P	80 - 120
Parathion Ethyl	94.9		P	80 - 120
Parathion Methyl	97.5		P	80 - 120
Pendimethalin	93.0		P	80 - 120
Phorate	100		P	80 - 120
Prodiamine	97.9		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	97.6		P	80 - 120
Simazine	102		P	80 - 120
Tebuconazole	95.8		P	80 - 120
Terbufos	99.1		P	80 - 120
Terbuthylazine	98.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A89864
Included Lab Sample IDs: 2065955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	97.8	96.5	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Boron	99.9	103	P/P	90 - 110
Cadmium	97.7	97.0	P/P	90 - 110
Chromium	97.9	101	P/P	90 - 110
Copper	105	106	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Selenium	98.7	100	P/P	90 - 110
Silver	98.2	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89864

Included Lab Sample IDs: 2065955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	93.1	96.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89868

Included Lab Sample IDs: 2065949

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89885

Included Lab Sample IDs: 2065948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89907

Included Lab Sample IDs: 2065948

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

Reference Method: SM 4500 F-C-97

Run ID: A89907

Included Lab Sample IDs: 2065948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89919

Included Lab Sample IDs: 2065949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.5	93.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90049

Included Lab Sample IDs: 2065954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.7	95.9	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						3.80	
EPA 200.7 Rev. 4.4	Barium	102		99.8	100	101		0.817
	Calcium	103		99.4	104			0.111
	Iron	108		107	107	107		0.271
	Magnesium	113		98.1	108	108		0.419
	Potassium	107		106	110	109		1.16
	Sodium	109		102	109	106		1.54
	Zinc	101		99.2	101	102		0.930
EPA 200.8 Rev. 5.4	Aluminum	102		102	96.9	98.1		1.29
	Antimony	99.4		104	101	103		1.49
	Arsenic	105		108	107	108		1.10
	Boron	105		106	98.3	99.6		1.15
	Cadmium	103		105	103	104		1.17
	Chromium	102		103	103	104		1.11
	Copper	107		105	105	107		1.82
	Lead	103		105	105	106		1.17
	Nickel	103		101	103	105		1.84
	Selenium	102		104	102	103		1.29
	Silver	103		102	101	103		1.84
	Thallium	96.5		102	100	104		3.54
EPA 300.0 Rev. 2.1	Chloride	105		105	104		0.719	
	Sulfate	105		103	104		0.683	
EPA 350.1 Rev. 2.0	Ammonia-N	101		103	102			0.460
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105						1.51
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		101	101			0.384
EPA 365.1 Rev. 2.0	Total-P	98.7		99.6	96.2			2.71
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5		97.0	97.4			0.412
EPA 8270D	Acetochlor	112	109	107	106	2.61		1.28
	Alachlor	109	96.4	106	103	12.0		3.28
	Ametryn	112	110	102	98.6	1.53		3.84
	Atrazine	103	101	108	119	1.95		10.1
	Atrazine Desethyl	98.8	89.1	89.1	77.1	10.3		14.5
	Azinphos Methyl	96.2	110	133	124	13.2		6.98
	Bromacil	108	55.0	91.8	88.4	65.1		3.84
	Butylate	84.6	65.3	63.3	48.6	25.8		26.3
	Chlorpyrifos Ethyl	93.8	95.0	88.6	99.9	1.25		12.0
	Chlorpyrifos Methyl	84.6	94.8	92.5	95.3	11.3		2.98
	Cyanazine	99.0	94.0	97.4	109	5.11		11.2
	Demeton	80.6	86.5	89.6	90.9	7.02		1.42
	Diazinon	110	98.6	101	102	11.1		1.42
	Dimethenamid	112	101	103	108	10.5		4.83
	Disulfoton	87.8	94.8	97.8	99.0	7.62		1.27
	Dithiopyr	110	97.0	100	101	12.5		1.14
	EPTC	81.0	72.2	65.1	45.8	11.5		34.8
	Ethion	103	77.8	49.7	60.1	28.3		19.0
	Ethoprop	104	90.7	100	97.1	13.4		3.38
	Fenamiphos	94.6	86.1	105	78.5	9.40		28.8
	Fipronil	108	84.0	89.5	96.9	25.4		7.95
	Fipronil Desulfinyl	99.4	88.7	73.0	76.3	11.4		4.40
	Fipronil Sulfide	102	82.0	80.9	82.0	22.0		1.30
	Fipronil Sulfone	104	82.7	81.5	92.3	23.0		12.4
	Fonofos	87.6	93.1	96.1	100	6.10		4.35
	Hexazinone	130	96.6	91.2	95.0	29.3		4.02
	Malathion	98.5	97.9	92.5	96.9	0.580		4.68

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	111	98.0	97.4	98.1	12.6	0.716
	Metolachlor	112	103	109	110	7.93	1.24
	Metribuzin	86.2	145	149	150	51.1	0.341
	Mevinphos	94.7	88.9	82.6	91.0	6.32	9.75
	Molinate	84.4	76.6	85.2	75.0	9.68	12.8
	Norflurazon	105	85.6	97.4	98.2	20.8	0.794
	Oxadiazon	113	95.8	88.6	90.4	16.1	2.01
	Parathion Ethyl	90.5	91.0	88.9	92.9	0.577	4.37
	Parathion Methyl	96.6	117	120	124	18.7	2.71
	Pendimethalin	88.6	93.6	71.9	71.8	5.45	0.106
	Phorate	81.6	89.4	96.7	91.8	9.09	5.18
	Prodiamine	93.6	91.8	89.6	80.9	1.90	10.2
	Prometon	107	83.6	85.0	81.5	24.5	4.14
	Prometryn	107	94.7	88.1	88.0	12.5	0.0766
	Simazine	101	105	105	111	4.64	6.05
	Tebuconazole	100	73.9	64.3	72.1	30.1	11.4
	Terbufos	89.7	91.5	99.4	99.0	2.01	0.389
	Terbuthylazine	106	98.0	96.9	98.5	7.93	1.62
EPA 8321B	2,4-D	89.4		96.8	89.0		8.31
	Acesulfame K	120		120	118		1.98
	Acetaminophen	101		118	107		9.93
	AMPA	87.3		99.1	67.4		38.1
	Bentazon	133		116	110		5.18
	Carbamazepine	96.0		98.9	92.1		7.10
	Diuron	82.8		77.8	77.8		0.0307
	Endothall	100		83.4	81.8		1.95
	Fenuron	120		120	111		7.31
	Fluridone	109		108	102		5.75
	Glufosinate	135		119	99.7		17.5
	Glyphosate	123		122	104		15.3
	Hydrocodone	110		121	113		7.03
	Ibuprofen	76.6		79.4	77.2		2.78
	Imazapyr	109		126	115		9.19
	Imidacloprid	102		157	151		3.86
	Linuron	73.1		80.6	74.1		8.48
	MCPP	99.1		125	112		10.8
	Naproxen	81.0		84.2	81.0		3.83
	Primidone	96.5		106	98.0		7.84
	Pyraclostrobin	76.2		76.4	75.2		1.54
	Sucralose	97.7		96.7	91.8		4.53
	Triclopyr	60.3		59.4	53.6		10.3
SM 2120 B	Color (true)	99.3				1.43	
SM 2320 B-97	Total Alkalinity	102				0.176	
SM 2540 C-97	TDS					0.380	
SM 4500 F-C-97	Fluoride	95.2		97.1	95.6		1.45
SM 5310 B-00	Organic Carbon	96.6		95.2	95.5		0.267

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2065948

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	2065955
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2065955
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2065948
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2065948
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2065949
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2065949
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2065949
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2065949
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2065950
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2065956
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2065954
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2065954
SM 2120 B / E31780	True Color measured at 450 nm	2065948
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2065948
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2065948
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2065948
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2065948
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2065949

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	02/28/2019			02/28/2019 17:07	Adrian Shelby	2065948
EPA 200.7 Rev. 4.4	02/28/2019	03/04/2019 17:40	Elliott D. Healy	03/05/2019 14:46	Betina Topolski	2065955
EPA 200.8 Rev. 5.4	02/28/2019	03/04/2019 17:40	Elliott D. Healy	03/06/2019 23:44	Allison Taylor	2065955
EPA 300.0 Rev. 2.1	02/28/2019			03/09/2019 16:17	Lipi Saha	2065948
EPA 350.1 Rev. 2.0	02/28/2019			03/06/2019 12:41	Ping Hua	2065949
EPA 351.2 Rev. 2.0	02/28/2019	03/04/2019 16:00	Adrian Shelby	03/05/2019 13:09	Joseph Suarez	2065949
EPA 353.2 Rev. 2.0	02/28/2019			03/04/2019 11:23	Beverly Y. Sanders	2065949
EPA 365.1 Rev. 2.0	02/28/2019	03/01/2019 13:40	Joseph Suarez	03/05/2019 16:43	Rosalyn Ballman	2065949
EPA 365.1 Rev. 2.0 dissolved	02/28/2019			02/28/2019 16:07	Jhamieka S. Greenwood	2065950
EPA 8270D	02/28/2019	03/04/2019 08:30	Rasheda Ghaffari	03/06/2019 18:12	Vandana T. Nagar	2065956
EPA 8321B	02/28/2019	03/04/2019 10:00	Rebecca Ware	03/11/2019 22:16	Rebecca Ware	2065954
	02/28/2019	03/04/2019 13:45	Rebecca Ware	03/04/2019 14:13	Rebecca Ware	2065954
	02/28/2019	03/04/2019 13:45	Rebecca Ware	03/05/2019 14:13	Rebecca Ware	2065954
	02/28/2019	03/05/2019 10:00	Hoor Shaik	03/05/2019 19:59	Juyoung Kim	2065954
SM 2120 B	02/28/2019			02/28/2019 16:38	Chelsea Hernandez	2065948
SM 2320 B-97	02/28/2019			03/08/2019 06:43	Dale L. Simmons	2065948
SM 2540 C-97	02/28/2019			03/01/2019 15:45	Mariam Hanna	2065948
SM 2540 D-97	02/28/2019			03/01/2019 15:45	Mariam Hanna	2065948
SM 4500 F-C-97	02/28/2019			03/08/2019 06:43	Dale L. Simmons	2065948
SM 5310 B-00	02/28/2019			03/08/2019 07:23	Julia Storbeck	2065949