

Chemical Analysis Report

SO-DIST-2018-12-11-02

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

Event Description: **SCI: Reference Stream**

Request ID: **RQ-2018-11-12-60**

Customer: **SO-DIST**

Project ID: **SCIREF**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Maryann Dugan

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 04-JAN-2019 14:05



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 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: Stroud Creek

Collection Date/Time: 12/10/2018 10:35

Field ID: G3SD0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047934	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P355977	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P356285	
		Sulfate	1.8		mg SO4/L	P356286	
	SM 2120 B	Color (true)	50	A	PCU	P355963	
	SM 2320 B-97	Total Alkalinity	266	A	mg CaCO3/L	P356129	
	SM 2540 C-97	TDS	421		mg/L	P356407	
	SM 2540 D-97	TSS	3	I	mg/L	P356479	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P356132	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.082		mg N/L	P356258	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P356094	
2047935	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P356137	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P356178	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P356071	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P356027	
	dissolved						
2047940	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	0.0010	I	ug/L	P355712	
		MCP	0.0022	I	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0020	U	ug/L	P355712	
		Diuron	0.0053	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.027		ug/L	P355712	
		Carbamazepine**	8.0E-04	U	ug/L	P355712	
		Fluridone**	0.026		ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.36		ug/L	P355853	
		Glyphosate**	0.10	U	ug/L	P355853	
		AMPA**	0.10	U	ug/L	P355853	
		Endothall**	0.25	U	ug/L	P355853	
		Glufosinate**	0.10	U	ug/L	P355853	
		Acesulfame K**	0.32	I	ug/L	P355853	
2047941	EPA 200.7 Rev. 4.4	Barium	27.4		ug/L	P356049	
		Calcium	107		mg/L	P356049	
		Iron	770		ug/L	P356049	
		Magnesium	9.31		mg/L	P356049	
		Potassium	1.4		mg/L	P356049	
		Sodium	37.4		mg/L	P356049	

Field ID: G3SD0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047941	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P356049	
	EPA 200.8 Rev. 5.4	Aluminum	17		ug/L	P356049	
		Antimony	0.076	I	ug/L	P356049	
		Arsenic	1.99		ug/L	P356049	
		Boron**	47.1		ug/L	P356049	
		Cadmium	0.020	U	ug/L	P356049	
		Chromium	0.40	U	ug/L	P356049	
		Copper	0.43	I	ug/L	P356049	
		Lead	0.050	U	ug/L	P356049	
		Nickel	0.41	I	ug/L	P356049	
		Selenium	0.20	U	ug/L	P356049	
		Silver	0.010	U	ug/L	P356049	
		Thallium	0.10	U	ug/L	P356049	
2047942	EPA 8270D	Alachlor	0.24	U	ng/L	P356161	
		Ametryn	0.39	I	ng/L	P356161	
		Atrazine	5.5		ng/L	P356161	
		Atrazine Desethyl	1.4	U	ng/L	P356161	
		Azinphos Methyl	2.1	U	ng/L	P356161	
		Bromacil	0.47	U	ng/L	P356161	
		Butylate	0.38	U	ng/L	P356161	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P356161	
		Chlorpyrifos Methyl	0.094	U	ng/L	P356161	
		Demeton	1.9	U	ng/L	P356161	
		Diazinon	0.12	U	ng/L	P356161	
		Disulfoton	0.47	U	ng/L	P356161	
		EPTC	1.2	U	ng/L	P356161	
		Ethion	0.14	U	ng/L	P356161	
		Ethoprop	0.094	U	ng/L	P356161	
		Fenamiphos	0.24	UJ	ng/L	P356161	LCS
		Fipronil	0.24	U	ng/L	P356161	
		Fipronil Sulfide	0.14	U	ng/L	P356161	
		Fipronil Sulfone	0.14	U	ng/L	P356161	
		Hexazinone	23		ng/L	P356161	
		Malathion	0.33	U	ng/L	P356161	
		Metribuzin	0.39	I	ng/L	P356161	
		Mevinphos	0.47	U	ng/L	P356161	
		Molinate	0.28	U	ng/L	P356161	
		Norflurazon	0.47	U	ng/L	P356161	
		Pendimethalin	0.94	U	ng/L	P356161	
		Phorate	0.24	U	ng/L	P356161	
		Prometon	0.85	U	ng/L	P356161	
		Prometryn	0.19	U	ng/L	P356161	
		Simazine	0.47	U	ng/L	P356161	
		Terbufos	0.094	U	ng/L	P356161	
		Terbutylazine	0.40	U	ng/L	P356161	

Field ID: G3SD0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047942	EPA 8270D	Fonofos	0.19	U	ng/L	P356161	LCS, RPD
		Metalaxyl	0.24	UJ	ng/L	P356161	
		Metolachlor	0.35	I	ng/L	P356161	
		Acetochlor	0.24	U	ng/L	P356161	
		Cyanazine	0.47	U	ng/L	P356161	
		Parathion Ethyl	0.24	U	ng/L	P356161	
		Parathion Methyl	0.24	U	ng/L	P356161	
		Dimethenamid**	0.094	U	ng/L	P356161	
		Fipronil Desulfinyl**	0.12	UJ	ng/L	P356161	
		Dithiopyr**	0.094	U	ng/L	P356161	
		Prodiamine**	0.16	U	ng/L	P356161	MS
		Oxadiazon**	0.094	U	ng/L	P356161	MS, RPD
		Tebuconazole**	0.47	UJ	ng/L	P356161	

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: Estimated value for Fipronil Desulfinyl due to lack of the second source standard. MS accuracies for Atrazine, Simazine, Oxadiazon, Metalaxyl, Hexazinone and Norflurazon 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: P355977

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356049

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: P356049

Component	Result	Code	Units
Aluminum	3.0	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	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	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: P356285

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356286

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356258

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: P356094

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356137

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356178

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

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

Reference Method: EPA 8270D
Batch ID: P356161

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.2	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	0.50	U	ng/L
Demeton	2.0	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	0.25	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	0.25	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P356161

Component	Result	Code	Units
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	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	0.25	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: P355712

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	4.0E-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: P355853

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: P355963

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P356129

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

Reference Method: SM 2540 C-97
Batch ID: P356407

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P356479

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P356071

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: P356049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	109		P	85 - 115
Sodium	112		P	85 - 115
Zinc	96.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.6		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	105		P	85 - 115
Boron	105		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	103		P	85 - 115
Copper	103		P	85 - 115
Lead	103		P	85 - 115
Nickel	104		P	85 - 115
Selenium	107		P	85 - 115
Silver	103		P	85 - 115
Thallium	95.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356285

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356286

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356094

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: P356137

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

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

Reference Method: EPA 8270D
Batch ID: P356161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	108	108	P/P	74 - 119
Alachlor	107	110	P/P	75 - 118
Ametryn	93.9	108	P/P	59 - 137
Atrazine	109	111	P/P	73 - 120
Atrazine Desethyl	64.2	62.0	P/P	19 - 129
Azinphos Methyl	117	105	P/P	65 - 181
Bromacil	72.2	77.2	P/P	43 - 123
Butylate	80.8	77.4	P/P	28 - 85.0
Chlorpyrifos Ethyl	110	103	P/P	55 - 112
Chlorpyrifos Methyl	108	101	P/P	35 - 124
Cyanazine	89.7	87.8	P/P	26 - 262
Demeton	73.9	71.9	P/P	43 - 122
Diazinon	102	106	P/P	72 - 120
Dimethenamid	111	111	P/P	60 - 130
Disulfoton	80.5	82.2	P/P	45 - 137
Dithiopyr	107	108	P/P	60 - 130
EPTC	79.9	84.6	P/P	28 - 95.0
Ethion	117	112	P/P	63 - 127
Ethoprop	91.3	101	P/P	63 - 109
Fenamiphos	52.8	40.9	F/F	66 - 136
Fipronil	108	109	P/P	63 - 126
Fipronil Desulfinyl	98.6	101	P/P	60 - 130
Fipronil Sulfide	117	112	P/P	59 - 123
Fipronil Sulfone	106	112	P/P	56 - 122
Fonofos	100	93.2	P/P	64 - 114
Hexazinone	112	137	P/P	49 - 144
Malathion	116	109	P/P	68 - 131
Metalaxyl	22.8	14.5	F/F	57 - 126
Metolachlor	108	109	P/P	75 - 118
Metribuzin	101	76.4	P/P	46 - 169
Mevinphos	83.6	87.2	P/P	34 - 126
Molinate	94.1	89.3	P/P	37 - 101
Norflurazon	89.3	99.1	P/P	63 - 127
Oxadiazon	107	114	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P356161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	99.0	90.9	P/P	78 - 109
Parathion Methyl	104	97.3	P/P	74 - 123
Pendimethalin	89.9	91.1	P/P	51 - 130
Phorate	71.0	79.4	P/P	53 - 116
Prodiamine	124	110	P/P	60 - 130
Prometon	76.5	87.6	P/P	66 - 124
Prometryn	95.6	103	P/P	66 - 124
Simazine	102	109	P/P	62 - 134
Tebuconazole	43.5	66.6	P/P	30 - 100
Terbufos	91.4	89.7	P/P	59 - 115
Terbutylazine	103	112	P/P	76 - 113

Reference Method: EPA 8321B
Batch ID: P355712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.2		P	40 - 150
Acetaminophen	92.6		P	30 - 150
Bentazon	74.7		P	30 - 150
Carbamazepine	80.8		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	64.2		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	78.5		P	40 - 160
Linuron	76.1		P	40 - 150
MCPP	95.0		P	40 - 150
Naproxen	77.5		P	40 - 150
Primidone	86.2		P	40 - 150
Pyraclostrobin	52.3		P	40 - 150
Triclopyr	58.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	122		P	40 - 140
Endothall	96.0		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	104		P	40 - 140
Sucralose	99.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P355963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P356129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047670	Barium	101		P	80 - 120
2047670	Calcium	105		P	80 - 120
2047670	Iron	105		P	80 - 120
2047670	Magnesium	107		P	80 - 120
2047670	Potassium	110		P	80 - 120
2047670	Sodium	107		P	80 - 120
2047670	Zinc	97.7		P	80 - 120
2047793	Barium	101	98.8	P/P	80 - 120
2047793	Calcium	100		P	80 - 120
2047793	Iron	106	106	P/P	80 - 120
2047793	Magnesium	109	109	P/P	80 - 120
2047793	Potassium	112	113	P/P	80 - 120
2047793	Sodium	114	116	P/P	80 - 120
2047793	Zinc	98.6	96.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047670	Aluminum	97.5		P	80 - 120
2047670	Antimony	101		P	80 - 120
2047670	Arsenic	104		P	80 - 120
2047670	Boron	103		P	80 - 120
2047670	Cadmium	104		P	80 - 120
2047670	Chromium	102		P	80 - 120
2047670	Copper	103		P	80 - 120
2047670	Lead	102		P	80 - 120
2047670	Nickel	101		P	80 - 120
2047670	Selenium	106		P	80 - 120
2047670	Silver	100		P	80 - 120
2047670	Thallium	94.2		P	80 - 120
2047793	Aluminum	100	100	P/P	80 - 120
2047793	Antimony	104	103	P/P	80 - 120
2047793	Arsenic	107	107	P/P	80 - 120
2047793	Boron	107	108	P/P	80 - 120
2047793	Cadmium	106	105	P/P	80 - 120
2047793	Chromium	104	104	P/P	80 - 120
2047793	Copper	105	104	P/P	80 - 120
2047793	Lead	105	105	P/P	80 - 120
2047793	Nickel	104	104	P/P	80 - 120
2047793	Selenium	102	109	P/P	80 - 120
2047793	Silver	104	104	P/P	80 - 120
2047793	Thallium	98.2	99.5	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047866	Chloride	96.9		P	90 - 110
2048019	Chloride	95.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047866	Sulfate	91.8		P	90 - 110
2048019	Sulfate	92.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047869	Ammonia-N	98.5	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048024	Kjeldahl Nitrogen	99.1	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047935	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047935	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047771	O-Phosphate-P	94.4	95.8	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P356161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047919	Acetochlor	104	107	P/P	67 - 125
2047919	Alachlor	104	109	P/P	69 - 123
2047919	Ametryn	106	96.3	P/P	52 - 151
2047919	Atrazine Desethyl	85.3	83.6	P/P	10 - 129
2047919	Azinphos Methyl	117	123	P/P	48 - 200
2047919	Bromacil	93.2	94.3	P/P	46 - 130
2047919	Butylate	37.5	43.9	P/P	10 - 85.0
2047919	Chlorpyrifos Ethyl	108	114	P/P	54 - 115
2047919	Chlorpyrifos Methyl	101	105	P/P	44 - 117
2047919	Cyanazine	91.6	85.8	P/P	10 - 262
2047919	Demeton	73.6	85.6	P/P	24 - 145
2047919	Diazinon	97.2	96.5	P/P	66 - 129
2047919	Dimethenamid	106	112	P/P	60 - 130
2047919	Disulfoton	92.6	105	P/P	45 - 139
2047919	Dithiopyr	106	108	P/P	60 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P356161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047919	EPTC	35.2	44.3	P/P	10 - 86.0
2047919	Ethion	116	122	P/P	59 - 133
2047919	Ethoprop	91.4	97.8	P/P	54 - 116
2047919	Fenamiphos	105	101	P/P	55 - 140
2047919	Fipronil	101	105	P/P	37 - 142
2047919	Fipronil Desulfinyl	92.1	96.1	P/P	60 - 130
2047919	Fipronil Sulfide	114	118	P/P	37 - 130
2047919	Fipronil Sulfone	104	109	P/P	18 - 143
2047919	Fonofos	87.9	98.7	P/P	55 - 118
2047919	Malathion	113	118	P/P	64 - 132
2047919	Metolachlor	103	102	P/P	56 - 137
2047919	Metribuzin	151	164	P/P	16 - 218
2047919	Mevinphos	82.8	90.0	P/P	34 - 129
2047919	Molinate	51.9	61.3	P/P	16 - 99.0
2047919	Parathion Ethyl	97.0	94.3	P/P	71 - 112
2047919	Parathion Methyl	110	113	P/P	65 - 127
2047919	Pendimethalin	101	98.1	P/P	35 - 159
2047919	Phorate	84.8	91.8	P/P	41 - 129
2047919	Prodiamine	136	134	F/F	60 - 130
2047919	Prometon	105	98.7	P/P	56 - 140
2047919	Prometryn	102	103	P/P	65 - 130
2047919	Tebuconazole	105	103	F/F	30 - 100
2047919	Terbufos	93.6	102	P/P	53 - 126
2047919	Terbutylazine	112	104	P/P	73 - 114

Reference Method: EPA 8321B
Batch ID: P355712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	2,4-D	68.5	75.9	P/P	40 - 150
2046826	Acetaminophen	102	125	P/P	30 - 150
2046826	Bentazon	42.1	33.6	P/P	30 - 150
2046826	Carbamazepine	76.6	72.1	P/P	40 - 150
2046826	Diuron	62.0	62.4	P/P	40 - 150
2046826	Fenuron	92.2	104	P/P	40 - 150
2046826	Fluridone	104	108	P/P	40 - 150
2046826	Hydrocodone	100	103	P/P	40 - 150
2046826	Ibuprofen	54.4	61.9	P/P	40 - 150
2046826	Imazapyr	109	127	P/P	40 - 150
2046826	Imidacloprid	129	134	P/P	40 - 160
2046826	Linuron	59.3	61.2	P/P	40 - 150
2046826	MCP	83.5	92.5	P/P	40 - 150
2046826	Naproxen	56.8	69.1	P/P	40 - 150
2046826	Primidone	96.9	91.6	P/P	40 - 150
2046826	Pyraclostrobin	51.2	59.3	P/P	40 - 150
2046826	Triclopyr	44.5	49.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	Acesulfame K	101	113	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	AMPA	86.2	74.5	P/P	40 - 140
2046826	Endothall	92.6	102	P/P	40 - 150
2046826	Glufosinate	90.2	84.4	P/P	40 - 150
2046826	Glyphosate	105	94.9	P/P	40 - 140
2046826	Sucralose	95.3	106	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047934	Fluoride	101	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047837	Organic Carbon	104	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047859	Turbidity	0.993	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047793	Barium	2.32	Spike	P	0 - 20
2047793	Calcium	1.38	Spike	P	0 - 20
2047793	Iron	0.628	Spike	P	0 - 20
2047793	Magnesium	0.561	Spike	P	0 - 20
2047793	Potassium	0.613	Spike	P	0 - 20
2047793	Sodium	1.01	Spike	P	0 - 20
2047793	Zinc	2.51	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047793	Aluminum	0.0547	Spike	P	0 - 20
2047793	Antimony	0.612	Spike	P	0 - 20
2047793	Arsenic	0.380	Spike	P	0 - 20
2047793	Boron	0.0819	Spike	P	0 - 20
2047793	Cadmium	0.795	Spike	P	0 - 20
2047793	Chromium	0.255	Spike	P	0 - 20
2047793	Copper	0.637	Spike	P	0 - 20
2047793	Lead	0.387	Spike	P	0 - 20
2047793	Nickel	0.0109	Spike	P	0 - 20
2047793	Selenium	6.97	Spike	P	0 - 20
2047793	Silver	0.229	Spike	P	0 - 20
2047793	Thallium	1.34	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047866	Chloride	0.373	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P356286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047866	Sulfate	0.684	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047869	Ammonia-N	0.0763	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048024	Kjeldahl Nitrogen	0.361	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047935	NO2NO3-N	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047935	Total-P	0.522	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047771	O-Phosphate-P	1.47	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P356161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047919	Acetochlor	2.21	Spike	P	0 - 30
2047919	Alachlor	4.62	Spike	P	0 - 30
2047919	Ametryn	8.38	Spike	P	0 - 30
2047919	Atrazine	0.937	Spike	P	0 - 30
2047919	Atrazine Desethyl	1.44	Spike	P	0 - 30
2047919	Azinphos Methyl	4.95	Spike	P	0 - 30
2047919	Bromacil	0.938	Spike	P	0 - 30
2047919	Butylate	15.9	Spike	P	0 - 30
2047919	Chlorpyrifos Ethyl	4.87	Spike	P	0 - 30
2047919	Chlorpyrifos Methyl	4.53	Spike	P	0 - 30
2047919	Cyanazine	6.53	Spike	P	0 - 30
2047919	Demeton	15.1	Spike	P	0 - 30
2047919	Diazinon	0.690	Spike	P	0 - 30
2047919	Dimethenamid	5.14	Spike	P	0 - 30
2047919	Disulfoton	12.8	Spike	P	0 - 30
2047919	Dithiopyr	1.36	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P356161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047919	EPTC	22.7	Spike	P	0 - 30
2047919	Ethion	5.16	Spike	P	0 - 30
2047919	Ethoprop	6.81	Spike	P	0 - 30
2047919	Fenamiphos	3.68	Spike	P	0 - 30
2047919	Fipronil	4.57	Spike	P	0 - 30
2047919	Fipronil Desulfinyl	3.95	Spike	P	0 - 30
2047919	Fipronil Sulfide	3.65	Spike	P	0 - 30
2047919	Fipronil Sulfone	4.18	Spike	P	0 - 30
2047919	Fonofos	11.6	Spike	P	0 - 30
2047919	Hexazinone	14.4	Spike	P	0 - 30
2047919	Malathion	5.02	Spike	P	0 - 30
2047919	Metaxyl	0.528	Spike	P	0 - 30
2047919	Metolachlor	0.391	Spike	P	0 - 30
2047919	Metribuzin	8.17	Spike	P	0 - 30
2047919	Mevinphos	8.28	Spike	P	0 - 30
2047919	Molinate	16.6	Spike	P	0 - 30
2047919	Norflurazon	1.28	Spike	P	0 - 30
2047919	Oxadiazon	0.184	Spike	P	0 - 30
2047919	Parathion Ethyl	2.78	Spike	P	0 - 30
2047919	Parathion Methyl	2.53	Spike	P	0 - 30
2047919	Pendimethalin	2.81	Spike	P	0 - 30
2047919	Phorate	7.93	Spike	P	0 - 30
2047919	Prodiamine	1.90	Spike	P	0 - 30
2047919	Prometon	6.04	Spike	P	0 - 30
2047919	Prometryn	0.990	Spike	P	0 - 30
2047919	Simazine	4.60	Spike	P	0 - 30
2047919	Tebuconazole	2.13	Spike	P	0 - 30
2047919	Terbufos	8.22	Spike	P	0 - 30
2047919	Terbutylazine	7.62	Spike	P	0 - 30
LFB	Acetochlor	0.00289	LCS	P	0 - 30
LFB	Alachlor	2.26	LCS	P	0 - 30
LFB	Ametryn	13.8	LCS	P	0 - 30
LFB	Atrazine	2.23	LCS	P	0 - 30
LFB	Atrazine Desethyl	3.48	LCS	P	0 - 30
LFB	Azinphos Methyl	10.4	LCS	P	0 - 30
LFB	Bromacil	6.68	LCS	P	0 - 30
LFB	Butylate	4.26	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	6.31	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	6.87	LCS	P	0 - 30
LFB	Cyanazine	2.17	LCS	P	0 - 30
LFB	Demeton	2.75	LCS	P	0 - 30
LFB	Diazinon	3.29	LCS	P	0 - 30
LFB	Dimethenamid	0.302	LCS	P	0 - 30
LFB	Disulfoton	2.13	LCS	P	0 - 30
LFB	Dithiopyr	0.590	LCS	P	0 - 30
LFB	EPTC	5.62	LCS	P	0 - 30
LFB	Ethion	4.56	LCS	P	0 - 30
LFB	Ethoprop	9.66	LCS	P	0 - 30
LFB	Fenamiphos	25.5	LCS	P	0 - 30
LFB	Fipronil	1.16	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	2.13	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P356161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	4.39	LCS	P	0 - 30
LFB	Fipronil Sulfone	5.36	LCS	P	0 - 30
LFB	Fonofos	7.31	LCS	P	0 - 30
LFB	Hexazinone	19.5	LCS	P	0 - 30
LFB	Malathion	6.50	LCS	P	0 - 30
LFB	Metalaxyl	44.5	LCS	F	0 - 30
LFB	Metolachlor	1.44	LCS	P	0 - 30
LFB	Metribuzin	28.0	LCS	P	0 - 30
LFB	Mevinphos	4.19	LCS	P	0 - 30
LFB	Molinate	5.27	LCS	P	0 - 30
LFB	Norflurazon	10.4	LCS	P	0 - 30
LFB	Oxadiazon	6.64	LCS	P	0 - 30
LFB	Parathion Ethyl	8.49	LCS	P	0 - 30
LFB	Parathion Methyl	6.39	LCS	P	0 - 30
LFB	Pendimethalin	1.33	LCS	P	0 - 30
LFB	Phorate	11.1	LCS	P	0 - 30
LFB	Prodiamine	12.1	LCS	P	0 - 30
LFB	Prometon	13.5	LCS	P	0 - 30
LFB	Prometryn	7.66	LCS	P	0 - 30
LFB	Simazine	6.46	LCS	P	0 - 30
LFB	Tebuconazole	41.8	LCS	F	0 - 30
LFB	Terbufos	1.85	LCS	P	0 - 30
LFB	Terbuthylazine	8.61	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	2,4-D	7.32	Spike	P	0 - 30
2046826	Acetaminophen	15.5	Spike	P	0 - 30
2046826	Bentazon	13.6	Spike	P	0 - 30
2046826	Carbamazepine	4.42	Spike	P	0 - 30
2046826	Diuron	0.455	Spike	P	0 - 30
2046826	Fenuron	11.7	Spike	P	0 - 30
2046826	Fluridone	4.37	Spike	P	0 - 30
2046826	Hydrocodone	2.63	Spike	P	0 - 30
2046826	Ibuprofen	12.9	Spike	P	0 - 30
2046826	Imazapyr	7.43	Spike	P	0 - 30
2046826	Imidacloprid	3.24	Spike	P	0 - 30
2046826	Linuron	3.20	Spike	P	0 - 30
2046826	MCP	9.16	Spike	P	0 - 30
2046826	Naproxen	19.6	Spike	P	0 - 30
2046826	Primidone	5.64	Spike	P	0 - 30
2046826	Pyraclostrobin	14.6	Spike	P	0 - 30
2046826	Triclopyr	11.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	Acesulfame K	9.46	Spike	P	0 - 30
2046826	AMPA	14.6	Spike	P	0 - 30
2046826	Endothall	9.75	Spike	P	0 - 30
2046826	Glufosinate	6.69	Spike	P	0 - 30
2046826	Glyphosate	10.0	Spike	P	0 - 30
2046826	Sucralose	7.76	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P355963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047934	Color (true)	1.56	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P356129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047934	Total Alkalinity	0.236	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P356407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047866	TDS	6.48	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P356132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047934	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P356071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047837	Organic Carbon	0.862	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: 2047940
Field Sample ID: G3SD0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	118	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.8	P	30 - 160
EPA 8321B	Diuron-d6	60.2	P	30 - 160
EPA 8321B	Endothall-d6	140	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	67.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.1	P	30 - 160
EPA 8321B	Primidone-d5	72.5	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160

Lab Sample ID: 2047942
Field Sample ID: G3SD0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	97.3	P	71 - 126
EPA 8270D	Terbufos-d10	89.7	P	59 - 149

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A88283
Included Lab Sample IDs: 2047934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	107	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A88286
Included Lab Sample IDs: 2047934

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

Reference Method: EPA 8321B
Run ID: A88298
Included Lab Sample IDs: 2047940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	69.2	101	P/P	60 - 150
Endothall	91.0	96.7	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A88299
Included Lab Sample IDs: 2047936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.3	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A88301
Included Lab Sample IDs: 2047940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	93.5	P/P	60 - 150
Glufosinate	110	114	P/P	60 - 150
Glyphosate	106	119	P/P	60 - 150

Reference Method: SM 5310 B-00
Run ID: A88317
Included Lab Sample IDs: 2047935

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A88324
Included Lab Sample IDs: 2047934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.4	98.9	P/P	90 - 110
Sulfate	97.8	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A88326
Included Lab Sample IDs: 2047940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	105	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A88336
Included Lab Sample IDs: 2047941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	96.6	101	P/P	90 - 110
Iron	95.9	99.5	P/P	90 - 110
Magnesium	97.4	101	P/P	90 - 110
Potassium	102	105	P/P	90 - 110
Zinc	99.8	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A88339
Included Lab Sample IDs: 2047934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A88339
Included Lab Sample IDs: 2047934

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A88340
Included Lab Sample IDs: 2047935

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A88358
Included Lab Sample IDs: 2047935

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A88367
Included Lab Sample IDs: 2047941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	97.6	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A88378
Included Lab Sample IDs: 2047940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.5	85.5	P/P	50 - 150
Acetaminophen	127	94.0	P/P	60 - 160
Bentazon	87.3	75.6	P/P	50 - 160
Carbamazepine	110	105	P/P	60 - 160
Diuron	107	91.5	P/P	60 - 150
Fenuron	123	121	P/P	60 - 150
Fluridone	125	121	P/P	60 - 160
Hydrocodone	117	93.2	P/P	60 - 150
Ibuprofen	85.6	82.1	P/P	50 - 160
Imazapyr	108	90.9	P/P	50 - 150
Imidacloprid	89.3	92.7	P/P	60 - 160
Linuron	108	101	P/P	60 - 150
MCPP	86.0	80.4	P/P	50 - 150
Naproxen	79.8	77.7	P/P	50 - 160
Primidone	119	110	P/P	60 - 160
Pyraclostrobin	106	104	P/P	60 - 150
Triclopyr	85.8	84.0	P/P	50 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A88384
Included Lab Sample IDs: 2047941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.9	100	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Silver	99.8	100	P/P	90 - 110
Thallium	91.7	91.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A88389
Included Lab Sample IDs: 2047935

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A88425
Included Lab Sample IDs: 2047935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A88475
Included Lab Sample IDs: 2047942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	94.6		P	80 - 120
Alachlor	94.4		P	80 - 120
Ametryn	95.3		P	80 - 120
Atrazine	103		P	80 - 120
Atrazine Desethyl	106		P	80 - 120
Azinphos Methyl	96.4		P	80 - 120
Bromacil	96.9		P	80 - 120
Butylate	96.0		P	80 - 120
Chlorpyrifos Ethyl	106		P	80 - 120
Chlorpyrifos Methyl	98.3		P	80 - 120
Cyanazine	97.3		P	80 - 120
Demeton	101		P	80 - 120
Diazinon	97.6		P	80 - 120
Dimethenamid	100		P	80 - 120
Disulfoton	97.5		P	80 - 120
Dithiopyr	94.2		P	80 - 120
EPTC	96.6		P	80 - 120
Ethion	98.8		P	80 - 120
Ethoprop	91.5		P	80 - 120
Fenamiphos	98.7		P	80 - 120
Fipronil	95.0		P	80 - 120
Fipronil Desulfinyl	96.7		P	80 - 120
Fipronil Sulfide	96.5		P	80 - 120
Fipronil Sulfone	92.7		P	80 - 120
Fonofos	93.1		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	96.5		P	80 - 120
Metalaxyl	98.7		P	80 - 120
Metolachlor	98.2		P	80 - 120
Metribuzin	106		P	80 - 120
Mevinphos	89.0		P	80 - 120
Molinate	99.3		P	80 - 120
Norflurazon	98.8		P	80 - 120
Oxadiazon	94.0		P	80 - 120
Parathion Ethyl	93.0		P	80 - 120
Parathion Methyl	104		P	80 - 120
Pendimethalin	94.5		P	80 - 120
Phorate	97.0		P	80 - 120
Prodiamine	95.0		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	95.7		P	80 - 120
Simazine	102		P	80 - 120
Tebuconazole	94.2		P	80 - 120
Terbufos	96.9		P	80 - 120
Terbutylazine	90.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A88549
Included Lab Sample IDs: 2047941

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88549

Included Lab Sample IDs: 2047941

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

* 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							0.993	
EPA 200.7 Rev. 4.4	Barium	101		101	101	98.8			2.32
	Calcium	100		105	100				1.38
	Iron	104		105	106	106			0.628
	Magnesium	108		107	109	109			0.561
	Potassium	109		110	112	113			0.613
	Sodium	112		116	107	114			1.01
	Zinc	96.5		97.7	98.6	96.2			2.51
EPA 200.8 Rev. 5.4	Aluminum	99.6		97.5	100	100			0.0547
	Antimony	102		101	104	103			0.612
	Arsenic	105		104	107	107			0.380
	Boron	105		103	107	108			0.0819
	Cadmium	105		104	106	105			0.795
	Chromium	103		102	104	104			0.255
	Copper	103		103	105	104			0.637
	Lead	103		102	105	105			0.387
	Nickel	104		101	104	104			0.0109
	Selenium	107		106	102	109			6.97
	Silver	103		100	104	104			0.229
	Thallium	95.1		94.2	98.2	99.5			1.34
EPA 300.0 Rev. 2.1	Chloride	96.6		96.9	95.7			0.373	
	Sulfate	94.3		91.8	92.7			0.684	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7		98.5	98.6				0.0763
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		99.1	99.5				0.361
EPA 353.2 Rev. 2.0	NO2NO3-N	101		100	102				1.15
EPA 365.1 Rev. 2.0	Total-P	99.8		101	101				0.522
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100		94.4	95.8				1.47
EPA 8270D	Acetochlor	108	108	104	107		0.0028		2.21
	Alachlor	107	110	104	109		2.26		4.62
	Ametryn	93.9	108	106	96.3		13.8		8.38
	Atrazine	109	111				2.23		0.937
	Atrazine Desethyl	64.2	62.0	85.3	83.6		3.48		1.44
	Azinphos Methyl	117	105	117	123		10.4		4.95
	Bromacil	72.2	77.2	93.2	94.3		6.68		0.938
	Butylate	80.8	77.4	37.5	43.9		4.26		15.9
	Chlorpyrifos Ethyl	110	103	108	114		6.31		4.87
	Chlorpyrifos Methyl	108	101	101	105		6.87		4.53
	Cyanazine	89.7	87.8	91.6	85.8		2.17		6.53
	Demeton	73.9	71.9	73.6	85.6		2.75		15.1
	Diazinon	102	106	97.2	96.5		3.29		0.690
	Dimethenamid	111	111	106	112		0.302		5.14
	Disulfoton	80.5	82.2	92.6	105		2.13		12.8
	Dithiopyr	107	108	106	108		0.590		1.36
	EPTC	79.9	84.6	35.2	44.3		5.62		22.7
	Ethion	117	112	116	122		4.56		5.16
	Ethoprop	91.3	101	91.4	97.8		9.66		6.81
	Fenamiphos	52.8	40.9	105	101		25.5		3.68
	Fipronil	108	109	101	105		1.16		4.57
	Fipronil Desulfinyl	98.6	101	92.1	96.1		2.13		3.95
	Fipronil Sulfide	117	112	114	118		4.39		3.65
	Fipronil Sulfone	106	112	104	109		5.36		4.18
	Fonofos	100	93.2	87.9	98.7		7.31		11.6
	Hexazinone	112	137				19.5		14.4
	Malathion	116	109	113	118		6.50		5.02

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8270D	Metalaxyl	22.8	14.5			44.5		0.528
	Metolachlor	108	109	103	102	1.44		0.391
	Metribuzin	101	76.4	151	164	28.0		8.17
	Mevinphos	83.6	87.2	82.8	90.0	4.19		8.28
	Molinate	94.1	89.3	51.9	61.3	5.27		16.6
	Norflurazon	89.3	99.1			10.4		1.28
	Oxadiazon	107	114			6.64		0.184
	Parathion Ethyl	99.0	90.9	97.0	94.3	8.49		2.78
	Parathion Methyl	104	97.3	110	113	6.39		2.53
	Pendimethalin	89.9	91.1	101	98.1	1.33		2.81
	Phorate	71.0	79.4	84.8	91.8	11.1		7.93
	Prodiamine	124	110	136	134	12.1		1.90
	Prometon	76.5	87.6	105	98.7	13.5		6.04
	Prometryn	95.6	103	102	103	7.66		0.990
	Simazine	102	109			6.46		4.60
	Tebuconazole	43.5	66.6	105	103	41.8		2.13
	Terbufos	91.4	89.7	93.6	102	1.85		8.22
	Terbuthylazine	103	112	112	104	8.61		7.62
EPA 8321B	2,4-D	76.2		68.5	75.9			7.32
	Acesulfame K	118		101	113			9.46
	Acetaminophen	92.6		102	125			15.5
	AMPA	122		86.2	74.5			14.6
	Bentazon	74.7		42.1	33.6			13.6
	Carbamazepine	80.8		76.6	72.1			4.42
	Diuron	81.8		62.0	62.4			0.455
	Endothall	96.0		92.6	102			9.75
	Fenuron	112		92.2	104			11.7
	Fluridone	107		104	108			4.37
	Glufosinate	106		90.2	84.4			6.69
	Glyphosate	104		105	94.9			10.0
	Hydrocodone	102		100	103			2.63
	Ibuprofen	64.2		54.4	61.9			12.9
	Imazapyr	112		109	127			7.43
	Imidacloprid	78.5		129	134			3.24
	Linuron	76.1		59.3	61.2			3.20
	MCPP	95.0		83.5	92.5			9.16
	Naproxen	77.5		56.8	69.1			19.6
	Primidone	86.2		96.9	91.6			5.64
SM 2120 B	Color (true)	103					1.56	
	Total Alkalinity	99.9					0.236	
SM 2540 C-97	TDS						6.48	
SM 4500 F-C-97	Fluoride	99.5		101	99.9			0.470
SM 5310 B-00	Organic Carbon	105		104	103			0.862

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2047934

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	2047941
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2047941
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2047934
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2047934
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2047935
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2047935
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2047935
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2047935
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2047936
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2047942
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2047940
SM 2120 B / E31780	True Color measured at 450 nm	2047934
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2047934
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2047934
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2047934
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2047934
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2047935

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	12/11/2018			12/11/2018 16:59	Megan Treadwell	2047934
EPA 200.7 Rev. 4.4	12/11/2018	12/12/2018 16:15	Elliott D. Healy	12/13/2018 22:21	Betina Topolski	2047941
	12/11/2018	12/12/2018 16:15	Elliott D. Healy	12/14/2018 12:28	Betina Topolski	2047941
EPA 200.8 Rev. 5.4	12/11/2018	12/12/2018 16:15	Elliott D. Healy	12/15/2018 12:44	Allison Taylor	2047941
	12/11/2018	12/12/2018 16:15	Elliott D. Healy	12/27/2018 18:25	Allison Taylor	2047941
EPA 300.0 Rev. 2.1	12/11/2018			12/17/2018 17:15	Lipi Saha	2047934
EPA 350.1 Rev. 2.0	12/11/2018			12/14/2018 13:16	Ping Hua	2047935
EPA 351.2 Rev. 2.0	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/14/2018 11:40	Chelsea Hernandez	2047935
EPA 353.2 Rev. 2.0	12/11/2018			12/12/2018 11:35	Beverly Y. Sanders	2047935
EPA 365.1 Rev. 2.0	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:41	Beverly Y. Sanders	2047935
EPA 365.1 Rev. 2.0 dissolved	12/11/2018			12/11/2018 17:11	Jhamieka S. Greenwood	2047936
EPA 8270D	12/11/2018	12/14/2018 10:00	Rasheda Ghaffari	12/18/2018 14:42	Vandana T. Nagar	2047942
EPA 8321B	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 20:11	Rebecca Ware	2047940
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 10:08	Rebecca Ware	2047940
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 21:54	Mohammad Ghaffari	2047940
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 20:04	Juyoung Kim	2047940
SM 2120 B	12/11/2018			12/11/2018 17:12	Chelsea Hernandez	2047934
SM 2320 B-97	12/11/2018			12/12/2018 22:44	Lauren Bottorf	2047934
SM 2540 C-97	12/11/2018			12/13/2018 23:45	Yijie Li	2047934
SM 2540 D-97	12/11/2018			12/13/2018 23:45	Yijie Li	2047934
SM 4500 F-C-97	12/11/2018			12/12/2018 22:35	Lauren Bottorf	2047934
SM 5310 B-00	12/11/2018			12/13/2018 01:26	Megan Treadwell	2047935