

Chemical Analysis Report

WAS-SECT-2019-02-26-01

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

Event Description: **SCI 4**
Request ID: **RQ-2019-02-25-49**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

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: 18-MAR-2019 16:36



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: STAFFORD CREEK 100 METERS UPSTREAM
OF SR69**

Collection Date/Time: 02/26/2019 11:20

Field ID: G2WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065374	EPA 180.1 Rev. 2.0	Turbidity	7.5	A	NTU	P359633	
	EPA 300.0 Rev. 2.1	Chloride	7.2		mg Cl/L	P360196	
		Sulfate	0.48	I	mg SO4/L	P360198	
	SM 2120 B	Color (true)	190		PCU	P359665	
	SM 2320 B-97	Total Alkalinity	8.7		mg CaCO3/L	P359772	
	SM 2540 C-97	TDS	59		mg/L	P360079	
	SM 2540 D-97	TSS	6	I	mg/L	P359983	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P359775	
2065375	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P359688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P359693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.33		mg N/L	P359733	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P359626	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P359862	
2065376	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P359643	
2065380	EPA 8321B	2,4-D	0.0020	U	ug/L	P359229	
		Acesulfame K**	0.10	U	ug/L	P359544	
		AMPA**	0.10	U	ug/L	P359544	MS
		Sucralose**	0.020	I	ug/L	P359544	
		Acetaminophen**	0.0080	U	ug/L	P359229	
		Endothall**	0.25	U	ug/L	P359544	
		Glufosinate**	0.10	U	ug/L	P359544	
		Bentazon	8.0E-04	U	ug/L	P359229	
		Glyphosate**	0.10	U	ug/L	P359544	
		Carbamazepine**	8.0E-04	U	ug/L	P359229	
		Diuron	0.0020	U	ug/L	P359229	
		Fenuron	0.016	U	ug/L	P359229	
		Fluridone**	8.0E-04	U	ug/L	P359229	
		Imazapyr**	0.017		ug/L	P359229	
		Hydrocodone**	0.0020	U	ug/L	P359229	
		Ibuprofen**	0.020	U	ug/L	P359229	
		Imidacloprid	0.0045	I	ug/L	P359229	MS
		Linuron	0.0040	U	ug/L	P359229	
		MCPP	0.0020	U	ug/L	P359229	
		Naproxen**	0.0080	U	ug/L	P359229	
		Primidone**	0.0040	U	ug/L	P359229	
		Pyraclostrobin**	0.0020	U	ug/L	P359229	
		Triclopyr**	0.0040	U	ug/L	P359229	
2065381	EPA 200.7 Rev. 4.4	Barium	23.9		ug/L	P359631	
		Calcium	4.40		mg/L	P359631	
		Iron	1.40E+03		ug/L	P359631	
		Magnesium	2.12		mg/L	P359631	
		Potassium	1.5		mg/L	P359631	

Field ID: G2WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065381	EPA 200.7 Rev. 4.4	Sodium	2.7		mg/L	P359631	
		Zinc	5.0	U	ug/L	P359631	
	EPA 200.8 Rev. 5.4	Aluminum	489		ug/L	P359631	
		Antimony	0.050	U	ug/L	P359631	
		Arsenic	0.78		ug/L	P359631	
		Boron**	11.2		ug/L	P359631	
		Cadmium	0.020	U	ug/L	P359631	
		Chromium	0.79	I	ug/L	P359631	
		Copper	0.40	U	ug/L	P359631	
		Lead	0.57		ug/L	P359631	
		Nickel	0.50	U	ug/L	P359631	
		Selenium	0.20	U	ug/L	P359631	MS
		Silver	0.010	U	ug/L	P359631	
		Thallium	0.10	U	ug/L	P359631	
2065382	EPA 8270D	Acetochlor	0.23	U	ng/L	P359947	
		Alachlor	0.23	U	ng/L	P359947	
		Ametryn	0.56	U	ng/L	P359947	
		Atrazine	0.23	U	ng/L	P359947	
		Atrazine Desethyl	1.4	U	ng/L	P359947	
		Azinphos Methyl	4.7	U	ng/L	P359947	
		Bromacil	0.47	UJ	ng/L	P359947	RPD
		Butylate	0.38	UJ	ng/L	P359947	LCS
		Chlorpyrifos Ethyl	0.23	U	ng/L	P359947	
		Chlorpyrifos Methyl	0.094	U	ng/L	P359947	
		Cyanazine	3.1	U	ng/L	P359947	
		Demeton	6.6	U	ng/L	P359947	
		Diazinon	0.12	U	ng/L	P359947	
		Dimethenamid**	0.094	U	ng/L	P359947	
		Disulfoton	0.47	U	ng/L	P359947	
		Dithiopyr**	0.094	U	ng/L	P359947	
		EPTC	1.2	UJ	ng/L	P359947	RPD
		Ethion	0.14	U	ng/L	P359947	
		Ethoprop	0.094	U	ng/L	P359947	
		Fenamiphos	0.47	U	ng/L	P359947	
		Fipronil	0.23	U	ng/L	P359947	
		Fipronil Desulfinyl**	0.12	U	ng/L	P359947	
		Fipronil Sulfide	0.14	U	ng/L	P359947	
		Fipronil Sulfone	0.14	U	ng/L	P359947	
		Fonofos	0.19	U	ng/L	P359947	
		Hexazinone	0.47	U	ng/L	P359947	
		Malathion	0.33	U	ng/L	P359947	
		Metalaxyl	0.28	U	ng/L	P359947	
		Metolachlor	2.6		ng/L	P359947	
		Metribuzin	0.70	UJ	ng/L	P359947	RPD
		Mevinphos	0.47	U	ng/L	P359947	

Field ID: G2WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2065382	EPA 8270D	Molinate	0.28	U	ng/L	P359947	
		Norflurazon	0.47	U	ng/L	P359947	
		Oxadiazon**	0.094	U	ng/L	P359947	
		Parathion Ethyl	0.23	U	ng/L	P359947	
		Parathion Methyl	0.52	U	ng/L	P359947	
		Pendimethalin	2.1	I	ng/L	P359947	
		Phorate	0.23	U	ng/L	P359947	
		Prodiamine**	0.16	U	ng/L	P359947	
		Prometon	0.85	U	ng/L	P359947	
		Prometryn	0.19	U	ng/L	P359947	
		Simazine	0.47	U	ng/L	P359947	
		Tebuconazole**	0.47	UJ	ng/L	P359947	RPD
		Terbufos	0.094	U	ng/L	P359947	
		Terbuthylazine	0.40	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 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/05/2019.

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: P359633

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359631

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: P359631

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: P360196

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359688

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: P359693

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359626

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359643

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: P359229**

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: P359544**

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: P359665

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359772

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

Reference Method: SM 2540 C-97
Batch ID: P360079

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359983

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359775

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359862

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: P359631

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	103		P	85 - 115
Iron	107		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	110		P	85 - 115
Sodium	111		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P359631

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	108		P	85 - 115
Boron	107		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	105		P	85 - 115
Copper	108		P	85 - 115
Lead	105		P	85 - 115
Nickel	105		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P360196

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P360198

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P359688

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P359693

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P359733

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: P359626

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P359643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		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: P359229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.2		P	40 - 150
Acetaminophen	94.8		P	30 - 150
Bentazon	112		P	30 - 150
Carbamazepine	89.6		P	40 - 150
Diuron	83.6		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	115		P	40 - 150
Ibuprofen	78.0		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	82.6		P	40 - 150
MCPP	97.3		P	40 - 150
Naproxen	75.3		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	69.3		P	40 - 150
Triclopyr	56.7		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P359544

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
AMPA	67.9		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	112		P	40 - 150
Glyphosate	105		P	40 - 140
Sucralose	107		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P359665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P359772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359775

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

Reference Method: SM 5310 B-00
Batch ID: P359862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	90.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P359631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065279	Barium	101		P	80 - 120
2065279	Calcium	101		P	80 - 120
2065279	Iron	105		P	80 - 120
2065279	Magnesium	101		P	80 - 120
2065279	Potassium	104		P	80 - 120
2065279	Sodium	101		P	80 - 120
2065279	Zinc	102		P	80 - 120
2065351	Barium	100	101	P/P	80 - 120
2065351	Calcium	101		P	80 - 120
2065351	Iron	105	105	P/P	80 - 120
2065351	Magnesium	99.7		P	80 - 120
2065351	Potassium	106	106	P/P	80 - 120
2065351	Sodium	104	106	P/P	80 - 120
2065351	Zinc	99.3	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P359631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065279	Aluminum	100		P	80 - 120
2065279	Antimony	103		P	80 - 120
2065279	Arsenic	108		P	80 - 120
2065279	Boron	105		P	80 - 120
2065279	Cadmium	106		P	80 - 120
2065279	Chromium	102		P	80 - 120
2065279	Copper	106		P	80 - 120
2065279	Lead	104		P	80 - 120
2065279	Nickel	102		P	80 - 120
2065279	Selenium	54.6		F	80 - 120
2065279	Silver	101		P	80 - 120
2065279	Thallium	106		P	80 - 120
2065351	Aluminum	101	102	P/P	80 - 120
2065351	Antimony	103	103	P/P	80 - 120
2065351	Arsenic	108	108	P/P	80 - 120
2065351	Boron	105	105	P/P	80 - 120
2065351	Cadmium	104	106	P/P	80 - 120
2065351	Chromium	104	105	P/P	80 - 120
2065351	Copper	105	105	P/P	80 - 120
2065351	Lead	105	105	P/P	80 - 120
2065351	Nickel	104	104	P/P	80 - 120
2065351	Selenium	102	103	P/P	80 - 120
2065351	Silver	103	103	P/P	80 - 120
2065351	Thallium	106	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P360196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065276	Chloride	105		P	90 - 110
2065451	Chloride	99.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065276	Sulfate	104		P	90 - 110
2065451	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065398	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065399	Kjeldahl Nitrogen	95.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065375	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065266	Total-P	101	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065411	O-Phosphate-P	95.9	98.0	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

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	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
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: P359229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065167	2,4-D	107	100	P/P	40 - 150
2065167	Acetaminophen	103	103	P/P	30 - 150
2065167	Bentazon	90.7	73.0	P/P	30 - 150
2065167	Carbamazepine	79.7	79.0	P/P	40 - 150
2065167	Diuron	74.6	72.4	P/P	40 - 150
2065167	Fenuron	111	105	P/P	40 - 150
2065167	Fluridone	117	111	P/P	40 - 150
2065167	Hydrocodone	124	123	P/P	40 - 150
2065167	Ibuprofen	83.8	77.5	P/P	40 - 150
2065167	Imazapyr	111	99.2	P/P	40 - 150
2065167	Imidacloprid	194	192	F/F	40 - 150
2065167	Linuron	78.0	71.2	P/P	40 - 150
2065167	MCPP	123	113	P/P	40 - 150
2065167	Naproxen	71.6	67.4	P/P	40 - 150
2065167	Primidone	119	116	P/P	40 - 150
2065167	Pyraclostrobin	86.3	81.4	P/P	40 - 150
2065167	Triclopyr	67.3	59.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065519	Acesulfame K	65.7	66.2	P/P	40 - 150
2065519	AMPA	37.3	48.7	F/P	40 - 150
2065519	Endothall	99.6	110	P/P	40 - 150
2065519	Glufosinate	75.1	72.6	P/P	40 - 150
2065519	Glyphosate	63.6	87.0	P/P	40 - 140
2065519	Sucralose	120	109	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065341	Fluoride	95.6	95.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062440	Organic Carbon	92.3	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P359633

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065374	Turbidity	14.8	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P359631

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065351	Barium	0.609	Spike	P	0 - 20
2065351	Calcium	2.29	Spike	P	0 - 20
2065351	Iron	0.503	Spike	P	0 - 20
2065351	Magnesium	2.53	Spike	P	0 - 20
2065351	Potassium	0.429	Spike	P	0 - 20
2065351	Sodium	1.40	Spike	P	0 - 20
2065351	Zinc	0.654	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P359631

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065351	Aluminum	0.688	Spike	P	0 - 20
2065351	Antimony	0.322	Spike	P	0 - 20
2065351	Arsenic	0.424	Spike	P	0 - 20
2065351	Boron	0.191	Spike	P	0 - 20
2065351	Cadmium	1.19	Spike	P	0 - 20
2065351	Chromium	0.810	Spike	P	0 - 20
2065351	Copper	0.254	Spike	P	0 - 20
2065351	Lead	0.281	Spike	P	0 - 20
2065351	Nickel	0.717	Spike	P	0 - 20
2065351	Selenium	1.42	Spike	P	0 - 20
2065351	Silver	0.165	Spike	P	0 - 20
2065351	Thallium	1.02	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P360196

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065276	Chloride	0.899	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P360198

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065276	Sulfate	0.00940	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065398	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065399	Kjeldahl Nitrogen	3.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065375	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065266	Total-P	2.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065411	O-Phosphate-P	1.08	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: P359229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065167	2,4-D	6.48	Spike	P	0 - 30
2065167	Acetaminophen	0.828	Spike	P	0 - 30
2065167	Bentazon	6.36	Spike	P	0 - 30
2065167	Carbamazepine	0.809	Spike	P	0 - 30
2065167	Diuron	3.06	Spike	P	0 - 30
2065167	Fenuron	5.16	Spike	P	0 - 30
2065167	Fluridone	4.45	Spike	P	0 - 30
2065167	Hydrocodone	0.752	Spike	P	0 - 30
2065167	Ibuprofen	7.83	Spike	P	0 - 30
2065167	Imazapyr	4.88	Spike	P	0 - 30
2065167	Imidacloprid	0.779	Spike	P	0 - 30
2065167	Linuron	9.10	Spike	P	0 - 30
2065167	MCP	8.15	Spike	P	0 - 30
2065167	Naproxen	6.05	Spike	P	0 - 30
2065167	Primidone	2.81	Spike	P	0 - 30
2065167	Pyraclostrobin	5.86	Spike	P	0 - 30
2065167	Triclopyr	12.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P359544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065519	Acesulfame K	0.768	Spike	P	0 - 30
2065519	AMPA	17.5	Spike	P	0 - 30
2065519	Endothall	9.78	Spike	P	0 - 30
2065519	Glufosinate	3.37	Spike	P	0 - 30
2065519	Glyphosate	22.2	Spike	P	0 - 30
2065519	Sucralose	8.43	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P359665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065482	Color (true)	2.94	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P359772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065341	Total Alkalinity	0.0152	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P360079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065388	TDS	2.68	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P359775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065341	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P359862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062440	Organic Carbon	3.24	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: 2065380
Field Sample ID: G2WA0004

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.0	P	30 - 160
EPA 8321B	Diuron-d6	65.3	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.0	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	78.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	88.3	P	30 - 160
EPA 8321B	Primidone-d5	97.2	P	30 - 160
EPA 8321B	Sucralose-d6	78.6	P	40 - 160
EPA 8321B	Sucralose-d6	78.6	P	40 - 160

Lab Sample ID: 2065382
Field Sample ID: G2WA0004

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	103	P	68 - 130
EPA 8270D	Terbufos-d10	90.3	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89702

Included Lab Sample IDs: 2065374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89703

Included Lab Sample IDs: 2065376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.2	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89714

Included Lab Sample IDs: 2065374

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

Reference Method: EPA 8321B

Run ID: A89717

Included Lab Sample IDs: 2065380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	122	116	P/P	50 - 150
Acetaminophen	115	117	P/P	60 - 160
Bentazon	116	124	P/P	50 - 160
Carbamazepine	104	105	P/P	60 - 150
Diuron	113	114	P/P	60 - 150
Fenuron	111	114	P/P	60 - 150
Fluridone	111	107	P/P	60 - 160
Hydrocodone	111	112	P/P	60 - 150
Ibuprofen	87.8	92.9	P/P	50 - 160
Imazapyr	98.8	104	P/P	50 - 150
Imidacloprid	103	105	P/P	60 - 150
Linuron	105	115	P/P	60 - 150
MCPP	88.8	92.6	P/P	50 - 150
Naproxen	96.9	91.8	P/P	50 - 160
Primidone	104	97.1	P/P	60 - 150
Pyraclostrobin	102	103	P/P	60 - 150
Triclopyr	93.9	98.0	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89722

Included Lab Sample IDs: 2065375

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89725

Included Lab Sample IDs: 2065375

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89725

Included Lab Sample IDs: 2065375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89727

Included Lab Sample IDs: 2065375

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89732

Included Lab Sample IDs: 2065381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.8	99.0	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	98.8	98.9	P/P	90 - 110
Magnesium	99.4	98.9	P/P	90 - 110
Potassium	100	99.9	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	99.3	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89739

Included Lab Sample IDs: 2065380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	67.2	66.4	P/P	60 - 160
Glufosinate	113	119	P/P	60 - 160
Glyphosate	117	116	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A89746

Included Lab Sample IDs: 2065374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89746

Included Lab Sample IDs: 2065374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89761

Included Lab Sample IDs: 2065381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89761

Included Lab Sample IDs: 2065381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	96.7	96.7	P/P	90 - 110
Arsenic	101	99.9	P/P	90 - 110
Boron	99.7	101	P/P	90 - 110
Cadmium	97.2	96.6	P/P	90 - 110
Chromium	100	100	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	98.1	97.2	P/P	90 - 110
Silver	95.7	95.6	P/P	90 - 110
Thallium	99.6	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89762

Included Lab Sample IDs: 2065380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	122	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89772

Included Lab Sample IDs: 2065375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89791

Included Lab Sample IDs: 2065375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	90.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89821

Included Lab Sample IDs: 2065380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	96.9	P/P	60 - 160
Endothall	99.9	97.1	P/P	60 - 160

Reference Method: EPA 8270D

Run ID: A89854

Included Lab Sample IDs: 2065382

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A89854

Included Lab Sample IDs: 2065382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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
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
Metaxyl	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
Terbutylazine	98.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89885

Included Lab Sample IDs: 2065374

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

Quality Assurance Report

Calibration Verification

* 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							14.8	
EPA 200.7 Rev. 4.4	Barium	104		101	100	101			0.609
	Calcium	103		101	101				2.29
	Iron	107		105	105	105			0.503
	Magnesium	102		101	99.7				2.53
	Potassium	110		104	106	106			0.429
	Sodium	111		101	104	106			1.40
	Zinc	103		102	99.3	100			0.654
EPA 200.8 Rev. 5.4	Aluminum	103		100	101	102			0.688
	Antimony	102		103	103	103			0.322
	Arsenic	108		108	108	108			0.424
	Boron	107		105	105	105			0.191
	Cadmium	104		106	104	106			1.19
	Chromium	105		102	104	105			0.810
	Copper	108		106	105	105			0.254
	Lead	105		104	105	105			0.281
	Nickel	105		102	104	104			0.717
	Selenium	103		54.6	102	103			1.42
	Silver	101		101	103	103			0.165
	Thallium	106		106	106	107			1.02
EPA 300.0 Rev. 2.1	Chloride	105		105	99.6			0.899	
	Sulfate	105		104	99.8			0.0094	
EPA 350.1 Rev. 2.0	Ammonia-N	102		102	100				1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		95.5	99.5				3.03
EPA 353.2 Rev. 2.0	NO2NO3-N	101		98.0					0.0
EPA 365.1 Rev. 2.0	Total-P	100		101	98.2				2.38
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6		95.9	98.0				1.08
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	84.2		107	100		6.48
	Acesulfame K	107		65.7	66.2		0.768
	Acetaminophen	94.8		103	103		0.828
	AMPA	67.9		37.3	48.7		17.5
	Bentazon	112		90.7	73.0		6.36
	Carbamazepine	89.6		79.7	79.0		0.809
	Diuron	83.6		74.6	72.4		3.06
	Endothall	104		99.6	110		9.78
	Fenuron	129		111	105		5.16
	Fluridone	114		117	111		4.45
	Glufosinate	112		75.1	72.6		3.37
	Glyphosate	105		63.6	87.0		22.2
	Hydrocodone	115		124	123		0.752
	Ibuprofen	78.0		83.8	77.5		7.83
	Imazapyr	102		111	99.2		4.88
	Imidacloprid	104		194	192		0.779
	Linuron	82.6		78.0	71.2		9.10
	MCPP	97.3		123	113		8.15
	Naproxen	75.3		71.6	67.4		6.05
	Primidone	103		119	116		2.81
SM 2120 B	Pyraclostrobin	69.3		86.3	81.4		5.86
	Sucralose	107		120	109		8.43
SM 2320 B-97	Triclopyr	56.7		67.3	59.4		12.4
	Color (true)	100				2.94	
SM 2540 C-97	Total Alkalinity	101				0.0152	
SM 4500 F-C-97	TDS					2.68	
SM 5310 B-00	Fluoride	95.6		95.6	95.6		0.0
	Organic Carbon	90.6		92.3	95.5		3.24

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2065374

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	2065381
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2065381
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2065374
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2065374
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2065375
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2065375
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2065375
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2065375
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2065376
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2065382
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2065380
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2065380
SM 2120 B / E31780	True Color measured at 450 nm	2065374
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2065374
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2065374
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2065374
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2065374
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2065375

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	02/26/2019			02/27/2019 17:05	Adrian Shelby	2065374
EPA 200.7 Rev. 4.4	02/26/2019	02/27/2019 16:15	Elliott D. Healy	02/28/2019 16:52	Betina Topolski	2065381
EPA 200.8 Rev. 5.4	02/26/2019	02/27/2019 16:15	Elliott D. Healy	03/01/2019 19:10	Allison Taylor	2065381
EPA 300.0 Rev. 2.1	02/26/2019			03/08/2019 10:14	Lipi Saha	2065374
EPA 350.1 Rev. 2.0	02/26/2019			02/28/2019 11:03	Ping Hua	2065375
EPA 351.2 Rev. 2.0	02/26/2019	02/28/2019 12:15	Adrian Shelby	03/04/2019 11:40	Joseph Suarez	2065375
EPA 353.2 Rev. 2.0	02/26/2019			02/28/2019 10:53	Beverly Y. Sanders	2065375
EPA 365.1 Rev. 2.0	02/26/2019	02/27/2019 12:40	Sima Feizi	02/28/2019 15:04	Rosalyn Ballman	2065375
EPA 365.1 Rev. 2.0 dissolved	02/26/2019			02/27/2019 12:22	Jhamieka S. Greenwood	2065376
EPA 8270D	02/26/2019	03/04/2019 08:30	Rasheda Ghaffari	03/06/2019 15:01	Vandana T. Nagar	2065382
EPA 8321B	02/26/2019	02/27/2019 09:30	Hoor Shaik	02/28/2019 09:37	Juyoung Kim	2065380
	02/26/2019	02/28/2019 14:00	Rebecca Ware	02/28/2019 17:54	Rebecca Ware	2065380
	02/26/2019	02/28/2019 14:00	Rebecca Ware	03/01/2019 18:28	Rebecca Ware	2065380
	02/26/2019	02/28/2019 14:00	Rebecca Ware	03/03/2019 00:34	Mohammad Ghaffari	2065380
SM 2120 B	02/26/2019			02/27/2019 17:11	Chelsea Hernandez	2065374
SM 2320 B-97	02/26/2019			02/28/2019 21:58	Dale L. Simmons	2065374
SM 2540 C-97	02/26/2019			03/01/2019 15:19	Yijie Li	2065374
SM 2540 D-97	02/26/2019			03/01/2019 15:19	Yijie Li	2065374
SM 4500 F-C-97	02/26/2019			02/28/2019 21:58	Dale L. Simmons	2065374
SM 5310 B-00	02/26/2019			03/04/2019 02:09	Chelsea Hernandez	2065375