Chemical Analysis Report

SW-DIST-2019-04-02-01

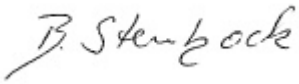
Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **SCIs**
Request ID: **RQ-2019-04-01-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 25-APR-2019 15:24



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: REF SITE ALAFIA S. PRONG @ BETHLEHEM RD. **Collection Date/Time: 04/01/2019 11:35**

Field ID: 24020361 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2074306	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P361445	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P361866	
		Sulfate	250		mg SO4/L	P361968	
	SM 2120 B	Color (true)	35	A	PCU	P361467	
	SM 2320 B-97	Total Alkalinity	183		mg CaCO3/L	P361853	
	SM 2540 C-97	TDS	564		mg/L	P361825	
	SM 2540 D-97	TSS	5	I	mg/L	P361664	
	SM 4500 F-C-97	Fluoride	3.3		mg F/L	P362104	
2074307	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P361701	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P361563	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P361484	
	EPA 365.1 Rev. 2.0	Total-P	0.86		mg P/L	P361578	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P361543	
2074308	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.73		mg P/L	P361436	
2074312	EPA 8321B	2,4-D	0.0020	U	ug/L	P361218	
		Acesulfame K**	0.10	UJ	ug/L	P361569	MS
		AMPA**	0.87		ug/L	P361569	
		Sucralose**	0.010	U	ug/L	P361569	
		Endothall**	0.25	U	ug/L	P361569	
		Acetaminophen**	0.0080	U	ug/L	P361218	
		Glufosinate**	0.10	U	ug/L	P361569	
		Glyphosate**	0.21	I	ug/L	P361569	
		Bentazon	8.0E-04	U	ug/L	P361218	
		Carbamazepine**	8.0E-04	U	ug/L	P361218	
		Diuron	0.0020	U	ug/L	P361218	
		Fenuron	0.016	U	ug/L	P361218	
		Fluridone**	8.0E-04	U	ug/L	P361218	
		Imazapyr**	0.12		ug/L	P361218	
		Hydrocodone**	0.0020	U	ug/L	P361218	
		Ibuprofen**	0.020	U	ug/L	P361218	
		Imidacloprid	0.0036	I	ug/L	P361218	
		Linuron	0.0040	U	ug/L	P361218	
		MCPP	0.0020	U	ug/L	P361218	
		Naproxen**	0.0080	U	ug/L	P361218	
		Primidone**	0.0040	U	ug/L	P361218	
		Pyraclostrobin**	0.0020	U	ug/L	P361218	
		Triclopyr**	0.0040	U	ug/L	P361218	
2074313	EPA 200.7 Rev. 4.4	Barium	7.8		ug/L	P361426	
		Calcium	75.0		mg/L	P361426	
		Iron	100	I	ug/L	P361426	
		Magnesium	34.6		mg/L	P361426	
		Potassium	7.0		mg/L	P361426	

Field ID: 24020361 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2074313	EPA 200.7 Rev. 4.4	Sodium	62.9		mg/L	P361426	
		Zinc	5.0	U	ug/L	P361426	
	EPA 200.8 Rev. 5.4	Aluminum	156		ug/L	P361426	
		Antimony	0.19	I	ug/L	P361426	
		Arsenic	2.04		ug/L	P361426	
		Boron**	34.1		ug/L	P361426	
		Cadmium	0.032	I	ug/L	P361426	
		Chromium	0.40	U	ug/L	P361426	
		Copper	0.40	U	ug/L	P361426	
		Lead	0.20	U	ug/L	P361426	
		Nickel	0.56	I	ug/L	P361426	
		Selenium	0.20	U	ug/L	P361426	
		Silver	0.010	U	ug/L	P361426	
		Thallium	0.10	U	ug/L	P361426	
2074314	EPA 8270D	Acetochlor	0.26	U	ng/L	P361536	
		Alachlor	0.26	U	ng/L	P361536	
		Ametryn	0.63	U	ng/L	P361536	
		Atrazine	1.7		ng/L	P361536	
		Atrazine Desethyl	1.6	U	ng/L	P361536	
		Azinphos Methyl	5.2	U	ng/L	P361536	
		Bromacil	26		ng/L	P361536	
		Butylate	0.42	U	ng/L	P361536	
		Chlorpyrifos Ethyl	0.26	UJ	ng/L	P361536	LCS, MS
		Chlorpyrifos Methyl	0.10	U	ng/L	P361536	MS
		Cyanazine	3.4	U	ng/L	P361536	
		Demeton	7.3	U	ng/L	P361536	
		Diazinon	0.13	U	ng/L	P361536	
		Dimethenamid**	0.10	U	ng/L	P361536	
		Disulfoton	0.52	U	ng/L	P361536	
		Dithiopyr**	0.10	U	ng/L	P361536	
		EPTC	1.3	U	ng/L	P361536	RPD
		Ethion	0.16	U	ng/L	P361536	
		Ethoprop	0.10	U	ng/L	P361536	
		Fenamiphos	0.52	U	ng/L	P361536	
		Fipronil	0.26	U	ng/L	P361536	
		Fipronil Desulfinyl**	0.13	U	ng/L	P361536	
		Fipronil Sulfide	0.16	U	ng/L	P361536	
		Fipronil Sulfone	0.16	U	ng/L	P361536	
		Fonofos	0.21	U	ng/L	P361536	
		Hexazinone	3.7		ng/L	P361536	
		Malathion	0.37	UJ	ng/L	P361536	LCS, MS
		Metalaxyl	0.31	U	ng/L	P361536	
		Metolachlor	0.52	U	ng/L	P361536	
		Metribuzin	0.78	U	ng/L	P361536	
		Mevinphos	0.52	U	ng/L	P361536	

Field ID: 24020361 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2074314	EPA 8270D	Molinate	0.31	U	ng/L	P361536	
		Norflurazon	0.80	I	ng/L	P361536	
		Oxadiazon**	0.10	U	ng/L	P361536	
		Parathion Ethyl	0.26	U	ng/L	P361536	
		Parathion Methyl	0.57	U	ng/L	P361536	MS
		Pendimethalin	1.0	U	ng/L	P361536	
		Phorate	0.26	U	ng/L	P361536	
		Prodiamine**	0.18	U	ng/L	P361536	
		Prometon	0.94	U	ng/L	P361536	
		Prometryn	0.21	U	ng/L	P361536	
		Simazine	0.52	U	ng/L	P361536	
		Tebuconazole**	0.52	U	ng/L	P361536	MS
		Terbufos	0.10	U	ng/L	P361536	
		Terbuthylazine	9.9		ng/L	P361536	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample
EPA 8321B: Refer to the narrative for an explanation of QC Codes.
EPA 8270D: MS accuracies for atrazine, simazine, ethoprop, metolachlor, and metribuzin 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: P361445

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361426

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: P361426

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: P361866

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361968

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361701

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: P361563

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361484

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361578

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361436

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

Reference Method: EPA 8270D
Batch ID: P361536

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: P361536

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

Reference Method: EPA 8321B
Batch ID: P361218

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: P361569

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: P361467

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361853

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

Reference Method: SM 2540 C-97
Batch ID: P361825

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362104

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361543

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: P361426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	96.4		P	85 - 115
Iron	97.7		P	85 - 115
Magnesium	95.8		P	85 - 115
Potassium	100		P	85 - 115
Sodium	98.9		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	98.8		P	85 - 115
Arsenic	105		P	85 - 115
Boron	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	97.1		P	85 - 115
Copper	105		P	85 - 115
Lead	103		P	85 - 115
Nickel	104		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361866

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361968

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361701

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.2		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361484

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361578

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P361536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	102	102	P/P	71 - 121
Alachlor	89.3	95.7	P/P	72 - 119
Ametryn	102	95.7	P/P	47 - 144
Atrazine	95.3	91.3	P/P	75 - 123
Atrazine Desethyl	74.9	71.1	P/P	45 - 133
Azinphos Methyl	119	117	P/P	66 - 165
Bromacil	91.9	76.2	P/P	43 - 123
Butylate	51.1	49.7	P/P	27 - 83.0
Chlorpyrifos Ethyl	121	111	F/P	70 - 117
Chlorpyrifos Methyl	105	103	P/P	71 - 120
Cyanazine	92.4	81.9	P/P	34 - 264
Demeton	71.3	67.5	P/P	41 - 122
Diazinon	73.3	78.4	P/P	70 - 127
Dimethenamid	108	107	P/P	60 - 130
Disulfoton	91.6	80.7	P/P	56 - 127
Dithiopyr	89.5	96.9	P/P	60 - 130
EPTC	50.0	48.3	P/P	24 - 84.0
Ethion	115	97.8	P/P	53 - 132
Ethoprop	62.8	79.6	P/P	57 - 117
Fenamiphos	94.8	81.2	P/P	55 - 136
Fipronil	86.8	79.8	P/P	64 - 126
Fipronil Desulfinyl	99.1	93.3	P/P	60 - 130
Fipronil Sulfide	92.9	94.4	P/P	57 - 120
Fipronil Sulfone	105	81.1	P/P	52 - 115
Fonofos	76.3	81.3	P/P	61 - 121
Hexazinone	106	108	P/P	62 - 131
Malathion	127	109	F/P	67 - 126
Metalaxyl	89.0	93.1	P/P	54 - 128
Metolachlor	90.5	93.5	P/P	71 - 118
Metribuzin	146	117	P/P	42 - 221
Mevinphos	78.1	84.6	P/P	45 - 114
Molinate	58.6	57.9	P/P	33 - 91.0
Norflurazon	95.2	91.8	P/P	60 - 123
Oxadiazon	84.1	82.1	P/P	60 - 130

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P361536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	87.0	82.9	P/P	73 - 111
Parathion Methyl	111	116	P/P	74 - 126
Pendimethalin	70.4	84.2	P/P	63 - 131
Phorate	68.4	69.4	P/P	54 - 115
Prodiamine	116	114	P/P	60 - 130
Prometon	96.2	89.5	P/P	61 - 120
Prometryn	95.6	91.1	P/P	62 - 126
Simazine	104	98.6	P/P	75 - 126
Tebuconazole	94.2	86.4	P/P	30 - 100
Terbufos	80.3	78.4	P/P	65 - 116
Terbuthylazine	101	93.8	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P361218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	73.7		P	40 - 150
Acetaminophen	87.4		P	30 - 150
Bentazon	103		P	30 - 150
Carbamazepine	75.1		P	40 - 150
Diuron	89.8		P	40 - 150
Fenuron	98.4		P	40 - 150
Fluridone	121		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	72.2		P	40 - 150
Imazapyr	101		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	83.2		P	40 - 150
MCPP	82.9		P	40 - 150
Naproxen	70.9		P	40 - 150
Primidone	91.1		P	40 - 150
Pyraclostrobin	75.6		P	40 - 150
Triclopyr	50.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	88.0		P	40 - 150
Endothall	93.0		P	40 - 150
Glufosinate	112		P	40 - 150
Glyphosate	124		P	40 - 140
Sucralose	86.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P361467

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P361853

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

Reference Method: SM 4500 F-C-97
Batch ID: P362104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P361543

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073640	Barium	101		P	80 - 120
2073640	Calcium	93.1		P	80 - 120
2073640	Iron	104		P	80 - 120
2073640	Magnesium	98.1		P	80 - 120
2073640	Potassium	94.8		P	80 - 120
2073640	Sodium	97.7		P	80 - 120
2073640	Zinc	104		P	80 - 120
2074263	Barium	96.5	95.3	P/P	80 - 120
2074263	Calcium	91.9		P	80 - 120
2074263	Iron	97.2	96.2	P/P	80 - 120
2074263	Magnesium	95.5		P	80 - 120
2074263	Potassium	97.5	94.5	P/P	80 - 120
2074263	Sodium	97.6		P	80 - 120
2074263	Zinc	97.2	95.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073640	Aluminum	102		P	80 - 120
2073640	Antimony	99.1		P	80 - 120
2073640	Arsenic	105		P	80 - 120
2073640	Boron	104		P	80 - 120
2073640	Cadmium	103		P	80 - 120
2073640	Chromium	97.9		P	80 - 120
2073640	Copper	103		P	80 - 120
2073640	Lead	103		P	80 - 120
2073640	Nickel	102		P	80 - 120
2073640	Selenium	102		P	80 - 120
2073640	Silver	99.5		P	80 - 120
2073640	Thallium	103		P	80 - 120
2074263	Aluminum	99.7	100	P/P	80 - 120
2074263	Antimony	101	101	P/P	80 - 120
2074263	Arsenic	107	106	P/P	80 - 120
2074263	Boron	109	107	P/P	80 - 120
2074263	Cadmium	105	104	P/P	80 - 120
2074263	Chromium	97.8	98.1	P/P	80 - 120
2074263	Copper	101	101	P/P	80 - 120
2074263	Lead	103	103	P/P	80 - 120
2074263	Nickel	103	103	P/P	80 - 120
2074263	Selenium	103	103	P/P	80 - 120
2074263	Silver	102	101	P/P	80 - 120
2074263	Thallium	105	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074317	Chloride	98.0		P	90 - 110
2074381	Chloride	99.3		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075064	Sulfate	99.7		P	90 - 110
2075134	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074277	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074223	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074307	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074344	O-Phosphate-P	94.6	96.7	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P361536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074888	Acetochlor	118	111	P/P	63 - 129
2074888	Alachlor	106	107	P/P	65 - 127
2074888	Ametryn	150	138	P/P	40 - 164
2074888	Atrazine Desethyl	114	112	P/P	14 - 157
2074888	Azinphos Methyl	134	132	P/P	49 - 180
2074888	Bromacil	94.1	95.0	P/P	48 - 130
2074888	Butylate	27.6	36.2	P/P	10 - 94.0
2074888	Chlorpyrifos Ethyl	114	132	P/F	58 - 123
2074888	Chlorpyrifos Methyl	142	135	F/F	58 - 125
2074888	Cyanazine	92.3	97.7	P/P	24 - 253
2074888	Demeton	76.7	69.2	P/P	25 - 149
2074888	Diazinon	92.9	113	P/P	59 - 144
2074888	Dimethenamid	124	121	P/P	60 - 130
2074888	Disulfoton	117	122	P/P	54 - 132
2074888	Dithiopyr	106	104	P/P	60 - 130
2074888	EPTC	23.5	33.5	P/P	10 - 92.0
2074888	Ethion	123	117	P/P	30 - 148
2074888	Fenamiphos	107	103	P/P	49 - 142
2074888	Fipronil	93.7	83.9	P/P	46 - 140
2074888	Fipronil Desulfinyl	116	118	P/P	60 - 130
2074888	Fipronil Sulfide	105	104	P/P	31 - 136

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P361536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074888	Fipronil Sulfone	127	117	P/P	16 - 136
2074888	Fonofos	108	119	P/P	55 - 129
2074888	Hexazinone	118	115	P/P	56 - 141
2074888	Malathion	140	136	F/F	56 - 135
2074888	Metalaxyl	106	108	P/P	54 - 135
2074888	Mevinphos	95.2	107	P/P	33 - 131
2074888	Molinate	50.4	56.8	P/P	14 - 98.0
2074888	Norflurazon	108	103	P/P	34 - 136
2074888	Oxadiazon	92.7	86.1	P/P	60 - 130
2074888	Parathion Ethyl	96.7	94.3	P/P	66 - 118
2074888	Parathion Methyl	158	130	F/P	64 - 136
2074888	Pendimethalin	93.1	78.6	P/P	59 - 144
2074888	Phorate	91.9	87.8	P/P	42 - 130
2074888	Prodiamine	127	130	P/P	60 - 130
2074888	Prometon	94.1	93.9	P/P	59 - 134
2074888	Prometryn	99.0	96.5	P/P	54 - 135
2074888	Tebuconazole	108	106	F/F	30 - 100
2074888	Terbufos	92.4	92.3	P/P	57 - 131
2074888	Terbuthylazine	98.6	96.3	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P361218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073321	2,4-D	69.0	79.9	P/P	40 - 150
2073321	Acetaminophen	67.9	76.1	P/P	30 - 150
2073321	Bentazon	74.0	81.4	P/P	30 - 150
2073321	Carbamazepine	77.9	83.2	P/P	40 - 150
2073321	Diuron	69.5	71.3	P/P	40 - 150
2073321	Fenuron	116	113	P/P	40 - 150
2073321	Fluridone	116	130	P/P	40 - 150
2073321	Hydrocodone	87.6	89.4	P/P	40 - 150
2073321	Ibuprofen	60.0	68.7	P/P	40 - 150
2073321	Imazapyr	73.4	79.2	P/P	40 - 150
2073321	Imidacloprid	138	135	P/P	40 - 150
2073321	Linuron	63.3	62.0	P/P	40 - 150
2073321	MCPP	94.6	111	P/P	40 - 150
2073321	Naproxen	69.5	66.0	P/P	40 - 150
2073321	Primidone	72.9	65.0	P/P	40 - 150
2073321	Pyraclostrobin	68.8	73.5	P/P	40 - 150
2073321	Triclopyr	54.2	59.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074312	Acesulfame K	154	147	F/P	40 - 150
2074312	AMPA	56.8	58.6	P/P	40 - 150
2074312	Endothall	74.8	77.6	P/P	40 - 150
2074312	Glufosinate	94.6	91.0	P/P	40 - 150
2074312	Glyphosate	90.7	69.3	P/P	40 - 140
2074312	Sucralose	102	92.0	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P362104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074475	Fluoride	99.6	99.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P361543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074165	Organic Carbon	103	103	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074284	Turbidity	0.905	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074263	Barium	1.26	Spike	P	0 - 20
2074263	Calcium	0.0578	Spike	P	0 - 20
2074263	Iron	1.07	Spike	P	0 - 20
2074263	Magnesium	1.22	Spike	P	0 - 20
2074263	Potassium	2.71	Spike	P	0 - 20
2074263	Sodium	0.636	Spike	P	0 - 20
2074263	Zinc	1.52	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074263	Aluminum	0.685	Spike	P	0 - 20
2074263	Antimony	0.845	Spike	P	0 - 20
2074263	Arsenic	0.104	Spike	P	0 - 20
2074263	Boron	1.57	Spike	P	0 - 20
2074263	Cadmium	0.970	Spike	P	0 - 20
2074263	Chromium	0.315	Spike	P	0 - 20
2074263	Copper	0.414	Spike	P	0 - 20
2074263	Lead	0.104	Spike	P	0 - 20
2074263	Nickel	0.139	Spike	P	0 - 20
2074263	Selenium	0.506	Spike	P	0 - 20
2074263	Silver	0.829	Spike	P	0 - 20
2074263	Thallium	0.702	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074381	Chloride	0.239	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075134	Sulfate	0.864	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074277	Ammonia-N	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074223	Kjeldahl Nitrogen	0.333	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074307	NO2NO3-N	0.205	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074307	Total-P	0.776	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074344	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P361536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074888	Acetochlor	5.57	Spike	P	0 - 30
2074888	Alachlor	0.421	Spike	P	0 - 30
2074888	Ametryn	8.11	Spike	P	0 - 30
2074888	Atrazine	17.8	Spike	P	0 - 30
2074888	Atrazine Desethyl	1.39	Spike	P	0 - 30
2074888	Azinphos Methyl	1.75	Spike	P	0 - 30
2074888	Bromacil	0.825	Spike	P	0 - 30
2074888	Butylate	27.1	Spike	P	0 - 30
2074888	Chlorpyrifos Ethyl	14.8	Spike	P	0 - 30
2074888	Chlorpyrifos Methyl	5.74	Spike	P	0 - 30
2074888	Cyanazine	5.68	Spike	P	0 - 30
2074888	Demeton	10.2	Spike	P	0 - 30
2074888	Diazinon	19.5	Spike	P	0 - 30
2074888	Dimethenamid	2.22	Spike	P	0 - 30
2074888	Disulfoton	3.41	Spike	P	0 - 30
2074888	Dithiopyr	1.11	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P361536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074888	EPTC	34.9	Spike	F	0 - 30
2074888	Ethion	5.33	Spike	P	0 - 30
2074888	Ethoprop	2.24	Spike	P	0 - 30
2074888	Fenamiphos	3.99	Spike	P	0 - 30
2074888	Fipronil	9.11	Spike	P	0 - 30
2074888	Fipronil Desulfinyl	1.99	Spike	P	0 - 30
2074888	Fipronil Sulfide	0.731	Spike	P	0 - 30
2074888	Fipronil Sulfone	4.25	Spike	P	0 - 30
2074888	Fonofos	10.2	Spike	P	0 - 30
2074888	Hexazinone	1.33	Spike	P	0 - 30
2074888	Malathion	3.41	Spike	P	0 - 30
2074888	Metalaxyl	1.53	Spike	P	0 - 30
2074888	Metolachlor	13.6	Spike	P	0 - 30
2074888	Metribuzin	6.92	Spike	P	0 - 30
2074888	Mevinphos	12.2	Spike	P	0 - 30
2074888	Molinate	11.9	Spike	P	0 - 30
2074888	Norflurazon	4.48	Spike	P	0 - 30
2074888	Oxadiazon	6.12	Spike	P	0 - 30
2074888	Parathion Ethyl	2.58	Spike	P	0 - 30
2074888	Parathion Methyl	19.8	Spike	P	0 - 30
2074888	Pendimethalin	16.8	Spike	P	0 - 30
2074888	Phorate	4.52	Spike	P	0 - 30
2074888	Prodiamine	1.75	Spike	P	0 - 30
2074888	Prometon	0.239	Spike	P	0 - 30
2074888	Prometryn	2.56	Spike	P	0 - 30
2074888	Simazine	21.9	Spike	P	0 - 30
2074888	Tebuconazole	1.38	Spike	P	0 - 30
2074888	Terbufos	0.147	Spike	P	0 - 30
2074888	Terbuthylazine	2.33	Spike	P	0 - 30
LFB	Acetochlor	0.423	LCS	P	0 - 30
LFB	Alachlor	6.92	LCS	P	0 - 30
LFB	Ametryn	6.43	LCS	P	0 - 30
LFB	Atrazine	4.35	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.31	LCS	P	0 - 30
LFB	Azinphos Methyl	1.64	LCS	P	0 - 30
LFB	Bromacil	18.7	LCS	P	0 - 30
LFB	Butylate	2.65	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	9.23	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	2.53	LCS	P	0 - 30
LFB	Cyanazine	12.1	LCS	P	0 - 30
LFB	Demeton	5.48	LCS	P	0 - 30
LFB	Diazinon	6.79	LCS	P	0 - 30
LFB	Dimethenamid	0.0430	LCS	P	0 - 30
LFB	Disulfoton	12.6	LCS	P	0 - 30
LFB	Dithiopyr	7.92	LCS	P	0 - 30
LFB	EPTC	3.48	LCS	P	0 - 30
LFB	Ethion	15.8	LCS	P	0 - 30
LFB	Ethoprop	23.6	LCS	P	0 - 30
LFB	Fenamiphos	15.4	LCS	P	0 - 30
LFB	Fipronil	8.30	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	5.98	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P361536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	1.60	LCS	P	0 - 30
LFB	Fipronil Sulfone	25.3	LCS	P	0 - 30
LFB	Fonofos	6.29	LCS	P	0 - 30
LFB	Hexazinone	1.74	LCS	P	0 - 30
LFB	Malathion	15.9	LCS	P	0 - 30
LFB	Metalaxyl	4.47	LCS	P	0 - 30
LFB	Metolachlor	3.31	LCS	P	0 - 30
LFB	Metribuzin	22.2	LCS	P	0 - 30
LFB	Mevinphos	8.03	LCS	P	0 - 30
LFB	Molinate	1.19	LCS	P	0 - 30
LFB	Norflurazon	3.59	LCS	P	0 - 30
LFB	Oxadiazon	2.50	LCS	P	0 - 30
LFB	Parathion Ethyl	4.82	LCS	P	0 - 30
LFB	Parathion Methyl	4.89	LCS	P	0 - 30
LFB	Pendimethalin	17.9	LCS	P	0 - 30
LFB	Phorate	1.50	LCS	P	0 - 30
LFB	Prodiamine	2.06	LCS	P	0 - 30
LFB	Prometon	7.27	LCS	P	0 - 30
LFB	Prometryn	4.88	LCS	P	0 - 30
LFB	Simazine	5.76	LCS	P	0 - 30
LFB	Tebuconazole	8.67	LCS	P	0 - 30
LFB	Terbufos	2.41	LCS	P	0 - 30
LFB	Terbuthylazine	7.15	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P361218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073321	2,4-D	14.6	Spike	P	0 - 30
2073321	Acetaminophen	11.3	Spike	P	0 - 30
2073321	Bentazon	9.55	Spike	P	0 - 30
2073321	Carbamazepine	6.54	Spike	P	0 - 30
2073321	Diuron	2.52	Spike	P	0 - 30
2073321	Fenuron	2.31	Spike	P	0 - 30
2073321	Fluridone	11.8	Spike	P	0 - 30
2073321	Hydrocodone	2.08	Spike	P	0 - 30
2073321	Ibuprofen	13.5	Spike	P	0 - 30
2073321	Imazapyr	7.58	Spike	P	0 - 30
2073321	Imidacloprid	1.91	Spike	P	0 - 30
2073321	Linuron	2.06	Spike	P	0 - 30
2073321	MCPP	16.1	Spike	P	0 - 30
2073321	Naproxen	5.05	Spike	P	0 - 30
2073321	Primidone	11.4	Spike	P	0 - 30
2073321	Pyraclostrobin	6.67	Spike	P	0 - 30
2073321	Triclopyr	8.92	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P361569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074312	Acesulfame K	5.18	Spike	P	0 - 30
2074312	AMPA	1.22	Spike	P	0 - 30
2074312	Endothall	3.65	Spike	P	0 - 30
2074312	Glufosinate	3.95	Spike	P	0 - 30
2074312	Glyphosate	21.2	Spike	P	0 - 30
2074312	Sucralose	10.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P361467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074306	Color (true)	5.36	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074382	Total Alkalinity	1.04	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074162	TDS	3.42	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074475	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P361543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074165	Organic Carbon	0.194	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: 2074312
Field Sample ID: 24020361

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	64.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.6	P	30 - 160
EPA 8321B	Diuron-d6	84.1	P	30 - 160
EPA 8321B	Endothall-d6	52.8	P	30 - 160
EPA 8321B	Endothall-d6	52.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	30 - 160
EPA 8321B	Ibuprofen-d3	100	P	30 - 160
EPA 8321B	Primidone-d5	65.9	P	30 - 160
EPA 8321B	Sucralose-d6	53.8	P	30 - 160
EPA 8321B	Sucralose-d6	53.8	P	30 - 160

Lab Sample ID: 2074314
Field Sample ID: 24020361

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	87.0	P	68 - 130
EPA 8270D	Terbufos-d10	103	P	61 - 136

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90388
Included Lab Sample IDs: 2074308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90389
Included Lab Sample IDs: 2074306

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

Reference Method: SM 2120 B
Run ID: A90399
Included Lab Sample IDs: 2074306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.7	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90407
Included Lab Sample IDs: 2074307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90421
Included Lab Sample IDs: 2074312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	111	94.2	P/P	50 - 150
Acetaminophen	122	119	P/P	60 - 160
Bentazon	100	105	P/P	50 - 160
Carbamazepine	117	110	P/P	60 - 150
Diuron	103	115	P/P	60 - 150
Fenuron	110	107	P/P	60 - 150
Fluridone	103	110	P/P	60 - 160
Hydrocodone	118	107	P/P	60 - 150
Ibuprofen	94.0	76.3	P/P	50 - 160
Imazapyr	73.5	98.6	P/P	50 - 150
Imidacloprid	104	94.0	P/P	60 - 150
Linuron	104	101	P/P	60 - 150
MCPP	92.2	90.8	P/P	50 - 150
Naproxen	105	83.7	P/P	50 - 160
Primidone	122	94.2	P/P	60 - 150
Pyraclostrobin	115	106	P/P	60 - 150
Triclopyr	94.5	90.8	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90423
Included Lab Sample IDs: 2074313

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90423
Included Lab Sample IDs: 2074313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	101	103	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	101	103	P/P	90 - 110
Potassium	100	102	P/P	90 - 110
Sodium	105	108	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90428
Included Lab Sample IDs: 2074307

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90462
Included Lab Sample IDs: 2074313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.1	97.2	P/P	90 - 110
Antimony	98.6	98.6	P/P	90 - 110
Arsenic	102	104	P/P	90 - 110
Boron	105	103	P/P	90 - 110
Cadmium	99.6	98.7	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Copper	103	107	P/P	90 - 110
Lead	101	102	P/P	90 - 110
Nickel	103	105	P/P	90 - 110
Selenium	97.8	98.3	P/P	90 - 110
Silver	99.8	100	P/P	90 - 110
Thallium	98.2	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90502
Included Lab Sample IDs: 2074307

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

Reference Method: EPA 8321B
Run ID: A90517
Included Lab Sample IDs: 2074312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.9	83.9	P/P	60 - 160
Glufosinate	108	113	P/P	60 - 160
Glyphosate	132	133	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90519
Included Lab Sample IDs: 2074307

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

Reference Method: EPA 8321B
Run ID: A90521
Included Lab Sample IDs: 2074312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	122	P/P	60 - 160
Endothall	113	107	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90527
Included Lab Sample IDs: 2074307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90538
Included Lab Sample IDs: 2074306

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

Reference Method: SM 2320 B-97
Run ID: A90560
Included Lab Sample IDs: 2074306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	103	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90601
Included Lab Sample IDs: 2074312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	62.1	P/P	60 - 160

Reference Method: SM 4500 F-C-97
Run ID: A90692
Included Lab Sample IDs: 2074306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 8270D
Run ID: A90911
Included Lab Sample IDs: 2074314

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A90911
Included Lab Sample IDs: 2074314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	94.6		P	80 - 120
Alachlor	112		P	80 - 120
Ametryn	108		P	80 - 120
Atrazine	97.1		P	80 - 120
Atrazine Desethyl	99.4		P	80 - 120
Azinphos Methyl	109		P	80 - 120
Bromacil	97.8		P	80 - 120
Butylate	95.2		P	80 - 120
Chlorpyrifos Ethyl	104		P	80 - 120
Chlorpyrifos Methyl	100		P	80 - 120
Cyanazine	97.7		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	95.3		P	80 - 120
Dimethenamid	98.1		P	80 - 120
Disulfoton	91.5		P	80 - 120
Dithiopyr	106		P	80 - 120
EPTC	95.2		P	80 - 120
Ethion	89.5		P	80 - 120
Ethoprop	90.7		P	80 - 120
Fenamiphos	93.4		P	80 - 120
Fipronil	107		P	80 - 120
Fipronil Desulfinyl	113		P	80 - 120
Fipronil Sulfide	115		P	80 - 120
Fipronil Sulfone	87.4		P	80 - 120
Fonofos	92.3		P	80 - 120
Hexazinone	98.3		P	80 - 120
Malathion	101		P	80 - 120
Metalaxyl	105		P	80 - 120
Metolachlor	102		P	80 - 120
Metribuzin	118		P	80 - 120
Mevinphos	91.3		P	80 - 120
Molinate	96.6		P	80 - 120
Norflurazon	99.8		P	80 - 120
Oxadiazon	89.7		P	80 - 120
Parathion Ethyl	96.2		P	80 - 120
Parathion Methyl	109		P	80 - 120
Pendimethalin	93.7		P	80 - 120
Phorate	89.8		P	80 - 120
Prodiamine	107		P	80 - 120
Prometon	103		P	80 - 120
Prometryn	106		P	80 - 120
Simazine	107		P	80 - 120
Tebuconazole	104		P	80 - 120
Terbufos	89.9		P	80 - 120
Terbuthylazine	102		P	80 - 120

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							0.905	
EPA 200.7 Rev. 4.4	Barium	102		101	96.5	95.3			1.26
	Calcium	96.4		93.1	91.9				0.0578
	Iron	97.7		104	97.2	96.2			1.07
	Magnesium	95.8		98.1	95.5				1.22
	Potassium	100		94.8	97.5	94.5			2.71
	Sodium	98.9		97.7	97.6				0.636
	Zinc	103		104	97.2	95.7			1.52
EPA 200.8 Rev. 5.4	Aluminum	102		102	99.7	100			0.685
	Antimony	98.8		99.1	101	101			0.845
	Arsenic	105		105	107	106			0.104
	Boron	105		104	109	107			1.57
	Cadmium	103		103	105	104			0.970
	Chromium	97.1		97.9	97.8	98.1			0.315
	Copper	105		103	101	101			0.414
	Lead	103		103	103	103			0.104
	Nickel	104		102	103	103			0.139
	Selenium	103		102	103	103			0.506
	Silver	101		99.5	102	101			0.829
	Thallium	103		103	105	106			0.702
EPA 300.0 Rev. 2.1	Chloride	100		99.3	98.0			0.239	
	Sulfate	101		101	99.7			0.864	
EPA 350.1 Rev. 2.0	Ammonia-N	103		103	101				1.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.2		102	101				0.333
EPA 353.2 Rev. 2.0	NO2NO3-N	102		100					0.205
EPA 365.1 Rev. 2.0	Total-P	98.7							0.776
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5		94.6	96.7				1.15
EPA 8270D	Acetochlor	102	102	118	111		0.423		5.57
	Alachlor	89.3	95.7	106	107		6.92		0.421
	Ametryn	102	95.7	150	138		6.43		8.11
	Atrazine	91.3	95.3				4.35		17.8
	Atrazine Desethyl	71.1	74.9	114	112		5.31		1.39
	Azinphos Methyl	117	119	134	132		1.64		1.75
	Bromacil	76.2	91.9	94.1	95.0		18.7		0.825
	Butylate	49.7	51.1	27.6	36.2		2.65		27.1
	Chlorpyrifos Ethyl	111	121	114	132		9.23		14.8
	Chlorpyrifos Methyl	105	103	142	135		2.53		5.74
	Cyanazine	92.4	81.9	92.3	97.7		12.1		5.68
	Demeton	71.3	67.5	76.7	69.2		5.48		10.2
	Diazinon	73.3	78.4	92.9	113		6.79		19.5
	Dimethenamid	108	107	124	121		0.0430		2.22
	Disulfoton	91.6	80.7	117	122		12.6		3.41
	Dithiopyr	89.5	96.9	106	104		7.92		1.11
	EPTC	50.0	48.3	23.5	33.5		3.48		34.9
	Ethion	115	97.8	123	117		15.8		5.33
	Ethoprop	62.8	79.6				23.6		2.24
	Fenamiphos	94.8	81.2	107	103		15.4		3.99
	Fipronil	86.8	79.8	93.7	83.9		8.30		9.11
	Fipronil Desulfinyl	99.1	93.3	116	118		5.98		1.99
	Fipronil Sulfide	92.9	94.4	105	104		1.60		0.731
	Fipronil Sulfone	105	81.1	127	117		25.3		4.25
	Fonofos	76.3	81.3	108	119		6.29		10.2
	Hexazinone	106	108	118	115		1.74		1.33
	Malathion	127	109	140	136		15.9		3.41

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	Metalaxyl	89.0	93.1	106	108	4.47		1.53
	Metolachlor	90.5	93.5			3.31		13.6
	Metribuzin	146	117			22.2		6.92
	Mevinphos	78.1	84.6	95.2	107	8.03		12.2
	Molinate	58.6	57.9	50.4	56.8	1.19		11.9
	Norflurazon	95.2	91.8	108	103	3.59		4.48
	Oxadiazon	84.1	82.1	92.7	86.1	2.50		6.12
	Parathion Ethyl	87.0	82.9	96.7	94.3	4.82		2.58
	Parathion Methyl	111	116	158	130	4.89		19.8
	Pendimethalin	84.2	70.4	93.1	78.6	17.9		16.8
	Phorate	69.4	68.4	91.9	87.8	1.50		4.52
	Prodiamine	114	116	127	130	2.06		1.75
	Prometon	89.5	96.2	94.1	93.9	7.27		0.239
	Prometryn	91.1	95.6	99.0	96.5	4.88		2.56
	Simazine	98.6	104			5.76		21.9
	Tebuconazole	86.4	94.2	108	106	8.67		1.38
	Terbufos	78.4	80.3	92.4	92.3	2.41		0.147
	Terbuthylazine	93.8	101	98.6	96.3	7.15		2.33
EPA 8321B	2,4-D	73.7		69.0	79.9			14.6
	Acesulfame K	118		154	147			5.18
	Acetaminophen	87.4		67.9	76.1			11.3
	AMPA	88.0		56.8	58.6			1.22
	Bentazon	103		74.0	81.4			9.55
	Carbamazepine	75.1		77.9	83.2			6.54
	Diuron	89.8		69.5	71.3			2.52
	Endothall	93.0		74.8	77.6			3.65
	Fenuron	98.4		116	113			2.31
	Fluridone	121		116	130			11.8
	Glufosinate	112		94.6	91.0			3.95
	Glyphosate	124		90.7	69.3			21.2
	Hydrocodone	105		87.6	89.4			2.08
	Ibuprofen	72.2		68.7	60.0			13.5
	Imazapyr	101		73.4	79.2			7.58
	Imidacloprid	104		138	135			1.91
	Linuron	83.2		63.3	62.0			2.06
	MCPP	82.9		94.6	111			16.1
	Naproxen	70.9		69.5	66.0			5.05
	Primidone	91.1		72.9	65.0			11.4
	Pyraclostrobin	75.6		68.8	73.5			6.67
	Sucralose	86.2		102	92.0			10.1
	Triclopyr	50.8		54.2	59.2			8.92
SM 2120 B	Color (true)	102					5.36	
SM 2320 B-97	Total Alkalinity	101					1.04	
SM 2540 C-97	TDS						3.42	
SM 4500 F-C-97	Fluoride	99.3		99.6	99.6			0.0
SM 5310 B-00	Organic Carbon	103		103	103			0.194

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2074306

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	2074313
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2074313
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2074306
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2074306
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2074307
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2074307
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2074307
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2074307
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2074308
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2074314
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2074312
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2074312
SM 2120 B / E31780	True Color measured at 450 nm	2074306
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2074306
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2074306
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2074306
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2074306
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2074307

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/02/2019			04/02/2019 17:05	Adrian Shelby	2074306
EPA 200.7 Rev. 4.4	04/02/2019	04/02/2019 16:30	Elliott D. Healy	04/03/2019 17:19	Betina Topolski	2074313
EPA 200.8 Rev. 5.4	04/02/2019	04/02/2019 16:30	Elliott D. Healy	04/04/2019 22:47	Martin Acosta	2074313
EPA 300.0 Rev. 2.1	04/02/2019			04/09/2019 18:28	Lipi Saha	2074306
	04/02/2019			04/11/2019 01:02	Lipi Saha	2074306
EPA 350.1 Rev. 2.0	04/02/2019			04/04/2019 13:53	Ping Hua	2074307
EPA 351.2 Rev. 2.0	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/08/2019 10:32	Joseph Suarez	2074307
EPA 353.2 Rev. 2.0	04/02/2019			04/03/2019 11:01	Beverly Y. Sanders	2074307
EPA 365.1 Rev. 2.0	04/02/2019	04/04/2019 13:35	Sima Feizi	04/05/2019 12:51	Rosalyn Ballman	2074307
EPA 365.1 Rev. 2.0 dissolved	04/02/2019			04/02/2019 16:48	Jhamieka S. Greenwood	2074308
EPA 8270D	04/02/2019	04/05/2019 08:00	Fe-Val Siddell	04/08/2019 23:46	Vandana T. Nagar	2074314
EPA 8321B	04/02/2019	04/02/2019 15:00	Hoor Shaik	04/03/2019 14:37	Juyoung Kim	2074312
	04/02/2019	04/04/2019 13:30	Rebecca Ware	04/04/2019 16:50	Rebecca Ware	2074312
	04/02/2019	04/04/2019 13:30	Rebecca Ware	04/05/2019 12:52	Rebecca Ware	2074312
	04/02/2019	04/04/2019 13:30	Rebecca Ware	04/09/2019 18:42	Rebecca Ware	2074312
SM 2120 B	04/02/2019			04/02/2019 16:37	Mariam Hanna	2074306
SM 2320 B-97	04/02/2019			04/09/2019 15:11	Samantha Davila	2074306
SM 2540 C-97	04/02/2019			04/03/2019 15:14	Yijie Li	2074306
SM 2540 D-97	04/02/2019			04/03/2019 15:14	Yijie Li	2074306
SM 4500 F-C-97	04/02/2019			04/13/2019 10:05	Dale L. Simmons	2074306
SM 5310 B-00	04/02/2019			04/04/2019 01:19	Julia Storbeck	2074307