

Chemical Analysis Report

NE-DIST-2019-02-07-01

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

Event Description: **SCI 2220 Nine mile**
Request ID: **RQ-2019-01-28-50**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 27-FEB-2019 11:16

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first few letters of the last name.

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: WEST BR AT DUNN AVE

Collection Date/Time: 02/06/2019 09:55

Field ID: 20030747

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060578	EPA 180.1 Rev. 2.0	Turbidity	9.7	A	NTU	P358525	
	EPA 300.0 Rev. 2.1	Chloride	25	A	mg Cl/L	P359272	
		Sulfate	10	A	mg SO4/L	P359275	
	SM 2120 B	Color (true)	210		PCU	P358543	
	SM 2320 B-97	Total Alkalinity	39		mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	171		mg/L	P358882	
	SM 2540 D-97	TSS	6	I	mg/L	P358740	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P359103	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P358795	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P358763	
2060579	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P358852	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P358702	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P359208	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P358538	
	EPA 8321B	2,4-D	0.0089		ug/L	P358394	
2060587		Sucralose**	0.075		ug/L	P358378	
		Bentazon	0.016		ug/L	P358394	
		MCP	0.0079	I	ug/L	P358394	
		Triclopyr**	0.0040	U	ug/L	P358394	
		Imidacloprid	0.011		ug/L	P358394	MS
		Diuron	0.0020	U	ug/L	P358394	
		Pyraclostrobin**	0.0020	U	ug/L	P358394	
		Primidone**	0.0040	U	ug/L	P358394	
		Linuron	0.0040	U	ug/L	P358394	
		Acetaminophen**	0.0080	U	ug/L	P358394	
		Fenuron	0.016	U	ug/L	P358394	
		Imazapyr**	0.068		ug/L	P358394	
		Carbamazepine**	8.0E-04	U	ug/L	P358394	
		Fluridone**	0.052		ug/L	P358394	
		Hydrocodone**	0.0020	U	ug/L	P358394	
		Naproxen**	0.0080	U	ug/L	P358394	
		Ibuprofen**	0.020	U	ug/L	P358394	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
2060588		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	
	EPA 200.7 Rev. 4.4	Barium	30.3		ug/L	P358547	
		Calcium	18.5		mg/L	P358547	
		Iron	1.53E+03		ug/L	P358547	
		Magnesium	5.17		mg/L	P358547	
		Potassium	1.7		mg/L	P358547	
		Sodium	14.0		mg/L	P358547	

Field ID: 20030747

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060588	EPA 200.7 Rev. 4.4	Zinc	5.2	I	ug/L	P358547	
		Aluminum	410		ug/L	P358547	
	EPA 200.8 Rev. 5.4	Antimony	0.080	I	ug/L	P358547	
		Arsenic	0.75		ug/L	P358547	
		Boron**	24.3		ug/L	P358547	
		Cadmium	0.020	U	ug/L	P358547	
		Chromium	0.99	I	ug/L	P358547	
		Copper	1.95		ug/L	P358547	
		Lead	0.52		ug/L	P358547	
		Nickel	0.85	I	ug/L	P358547	
		Selenium	0.20	U	ug/L	P358547	
		Silver	0.010	U	ug/L	P358547	
		Thallium	0.10	U	ug/L	P358547	
2060594	EPA 8270D	Acetochlor	0.24	U	ng/L	P358410	
		Alachlor	0.24	U	ng/L	P358410	
		Ametryn	0.57	U	ng/L	P358410	
		Atrazine	170		ng/L	P358410	
		Atrazine Desethyl	10	J	ng/L	P358410	
		Azinphos Methyl	2.2	U	ng/L	P358410	
		Bromacil	0.48	U	ng/L	P358410	
		Butylate	0.38	U	ng/L	P358410	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P358410	
		Chlorpyrifos Methyl	0.096	U	ng/L	P358410	
		Cyanazine	3.1	UJ	ng/L	P358410	RPD
		Demeton	6.7	U	ng/L	P358410	
		Diazinon	0.12	U	ng/L	P358410	
		Dimethenamid**	0.096	U	ng/L	P358410	
		Disulfoton	0.48	U	ng/L	P358410	
		Dithiopyr**	0.22	I	ng/L	P358410	
		EPTC	1.2	U	ng/L	P358410	
		Ethion	0.14	UJ	ng/L	P358410	RPD
		Ethoprop	0.096	U	ng/L	P358410	
		Fenamiphos	0.48	U	ng/L	P358410	
		Fipronil	0.84	I	ng/L	P358410	
		Fipronil Desulfinyl**	0.92	J	ng/L	P358410	
		Fipronil Sulfide	1.0	J	ng/L	P358410	
		Fipronil Sulfone	3.4	J	ng/L	P358410	
		Fonofos	0.19	U	ng/L	P358410	
		Hexazinone	0.48	U	ng/L	P358410	
		Malathion	0.33	U	ng/L	P358410	
		Metalaxyl	0.29	U	ng/L	P358410	
		Metolachlor	0.48	U	ng/L	P358410	
		Metribuzin	0.19	UJ	ng/L	P358410	CCV
		Mevinphos	0.48	U	ng/L	P358410	
		Molinate	0.29	U	ng/L	P358410	

Field ID: 20030747

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060594	EPA 8270D	Norflurazon	0.48	U	ng/L	P358410	
		Oxadiazon**	0.29	I	ng/L	P358410	
		Parathion Ethyl	0.24	U	ng/L	P358410	
		Parathion Methyl	0.53	U	ng/L	P358410	
		Pendimethalin	0.96	U	ng/L	P358410	
		Phorate	0.24	U	ng/L	P358410	
		Prodiamine**	0.46	I	ng/L	P358410	
		Prometon	0.86	U	ng/L	P358410	
		Prometryn	0.19	U	ng/L	P358410	
		Simazine	200		ng/L	P358410	
		Tebuconazole**	0.48	U	ng/L	P358410	
		Terbufos	0.096	U	ng/L	P358410	
		Terbutylazine	0.41	U	ng/L	P358410	

Ref. Method and Comment:

EPA 8270D: MS accuracies for Atrazine and Simazine not assessed due to high content of these parameters in the sample spiked. Estimation for Atrazine Desethyl, Fipronil Desulfinyl , Fipronil Sulfide and Fipronil Sulfone due to Internal Standard recovery outside control limits. 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: P358525

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358547

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: P358547

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: P359272

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

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: P358763

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358852

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358538

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

Reference Method: EPA 8270D
Batch ID: P358410

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	2.2	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	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: P358410

Component	Result	Code	Units
Metolachlor	0.50	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	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: P358378

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

Reference Method: EPA 8321B
Batch ID: P358394

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P358543

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359099

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

Reference Method: SM 2540 C-97
Batch ID: P358882

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358740

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359208

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: P358547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	111		P	85 - 115
Iron	110		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	98.2		P	85 - 115
Arsenic	104		P	85 - 115
Boron	106		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Copper	102		P	85 - 115
Lead	104		P	85 - 115
Nickel	102		P	85 - 115
Selenium	101		P	85 - 115
Silver	101		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358763

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: P358852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.1		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P358410

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	88.4	112	P/P	71 - 121
Alachlor	89.8	106	P/P	72 - 119
Ametryn	105	121	P/P	47 - 144
Atrazine	115	118	P/P	75 - 123
Atrazine Desethyl	84.0	95.6	P/P	45 - 133
Azinphos Methyl	104	135	P/P	66 - 165
Bromacil	56.6	60.1	P/P	43 - 123
Butylate	59.7	63.3	P/P	27 - 83.0
Chlorpyrifos Ethyl	86.6	87.4	P/P	70 - 117
Chlorpyrifos Methyl	85.9	93.7	P/P	71 - 120
Cyanazine	110	162	P/P	34 - 264
Demeton	84.0	102	P/P	41 - 122
Diazinon	89.4	113	P/P	70 - 127
Dimethenamid	84.5	106	P/P	60 - 130
Disulfoton	88.2	98.8	P/P	56 - 127
Dithiopyr	88.8	106	P/P	60 - 130
EPTC	57.8	62.2	P/P	24 - 84.0
Ethion	92.4	61.1	P/P	53 - 132
Ethoprop	87.0	95.3	P/P	57 - 117
Fenamiphos	86.6	69.1	P/P	55 - 136
Fipronil	81.7	90.0	P/P	64 - 126
Fipronil Desulfinyl	78.6	79.1	P/P	60 - 130
Fipronil Sulfide	86.0	69.6	P/P	57 - 120
Fipronil Sulfone	83.7	83.0	P/P	52 - 115
Fonofos	84.7	89.3	P/P	61 - 121
Hexazinone	108	99.1	P/P	62 - 131
Malathion	94.8	82.7	P/P	67 - 126
Metalaxyl	93.5	91.3	P/P	54 - 128
Metolachlor	90.1	106	P/P	71 - 118
Metribuzin	142	160	P/P	42 - 221
Mevinphos	81.2	74.6	P/P	45 - 114
Molinate	67.8	78.7	P/P	33 - 91.0
Norflurazon	84.0	91.6	P/P	60 - 123
Oxadiazon	91.1	83.0	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P358410

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	88.2	85.4	P/P	73 - 111
Parathion Methyl	102	122	P/P	74 - 126
Pendimethalin	89.9	92.0	P/P	63 - 131
Phorate	92.7	107	P/P	54 - 115
Prodiamine	104	98.3	P/P	60 - 130
Prometon	88.4	91.5	P/P	61 - 120
Prometryn	90.7	87.8	P/P	62 - 126
Simazine	101	94.4	P/P	75 - 126
Tebuconazole	85.9	72.0	P/P	30 - 100
Terbufos	88.7	97.3	P/P	65 - 116
Terbuthylazine	95.9	99.0	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P358378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	91.1		P	40 - 150
Endothall	98.8		P	40 - 150
Glufosinate	71.3		P	40 - 150
Glyphosate	79.3		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	87.2		P	40 - 150
Acetaminophen	89.9		P	30 - 150
Bentazon	98.3		P	30 - 150
Carbamazepine	88.5		P	40 - 150
Diuron	78.2		P	40 - 150
Fenuron	117		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	98.7		P	40 - 150
Ibuprofen	85.3		P	40 - 150
Imazapyr	92.7		P	40 - 150
Imidacloprid	94.4		P	40 - 150
Linuron	77.0		P	40 - 150
MCPP	115		P	40 - 150
Naproxen	95.6		P	40 - 150
Primidone	95.5		P	40 - 150
Pyraclostrobin	65.5		P	40 - 150
Triclopyr	75.5		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P358543

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: P359099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060347	Barium	101	100	P/P	80 - 120
2060347	Calcium	108	113	P/P	80 - 120
2060347	Iron	108	113	P/P	80 - 120
2060347	Magnesium	110	115	P/P	80 - 120
2060347	Potassium	104	108	P/P	80 - 120
2060347	Sodium	97.9	98.6	P/P	80 - 120
2060347	Zinc	103	102	P/P	80 - 120
2060476	Barium	99.5		P	80 - 120
2060476	Calcium	108		P	80 - 120
2060476	Iron	108		P	80 - 120
2060476	Magnesium	104		P	80 - 120
2060476	Potassium	99.4		P	80 - 120
2060476	Sodium	98.8		P	80 - 120
2060476	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060347	Aluminum	101	99.1	P/P	80 - 120
2060347	Antimony	101	98.5	P/P	80 - 120
2060347	Arsenic	106	106	P/P	80 - 120
2060347	Boron	109	107	P/P	80 - 120
2060347	Cadmium	105	105	P/P	80 - 120
2060347	Chromium	108	109	P/P	80 - 120
2060347	Copper	107	107	P/P	80 - 120
2060347	Lead	107	106	P/P	80 - 120
2060347	Nickel	109	109	P/P	80 - 120
2060347	Selenium	103	102	P/P	80 - 120
2060347	Silver	102	102	P/P	80 - 120
2060347	Thallium	106	107	P/P	80 - 120
2060476	Aluminum	101		P	80 - 120
2060476	Antimony	104		P	80 - 120
2060476	Arsenic	109		P	80 - 120
2060476	Boron	109		P	80 - 120
2060476	Cadmium	107		P	80 - 120
2060476	Chromium	107		P	80 - 120
2060476	Copper	104		P	80 - 120
2060476	Lead	107		P	80 - 120
2060476	Nickel	105		P	80 - 120
2060476	Selenium	104		P	80 - 120
2060476	Silver	106		P	80 - 120
2060476	Thallium	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060482	Chloride	95.4		P	90 - 110
2060578	Chloride	97.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060482	Sulfate	95.3		P	90 - 110
2060578	Sulfate	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060583	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060640	Kjeldahl Nitrogen	99.2	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060555	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060519	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060453	O-Phosphate-P	95.7	97.7	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P358410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060276	Acetochlor	117	97.9	P/P	63 - 129
2060276	Alachlor	110	88.3	P/P	65 - 127
2060276	Ametryn	137	101	P/P	40 - 164
2060276	Atrazine Desethyl	90.7	71.8	P/P	14 - 157
2060276	Azinphos Methyl	144	124	P/P	49 - 180
2060276	Bromacil	90.8	74.9	P/P	48 - 130
2060276	Butylate	63.0	54.8	P/P	10 - 94.0
2060276	Chlorpyrifos Ethyl	86.0	79.2	P/P	58 - 123
2060276	Chlorpyrifos Methyl	92.6	83.6	P/P	58 - 125
2060276	Cyanazine	159	134	P/P	24 - 253
2060276	Demeton	103	88.7	P/P	25 - 149
2060276	Diazinon	119	96.4	P/P	59 - 144
2060276	Dimethenamid	111	86.5	P/P	60 - 130
2060276	Disulfoton	102	86.8	P/P	54 - 132
2060276	Dithiopyr	114	92.0	P/P	60 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P358410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060276	EPTC	56.8	49.1	P/P	10 - 92.0
2060276	Ethion	56.7	52.7	P/P	30 - 148
2060276	Ethoprop	100	82.8	P/P	50 - 130
2060276	Fenamiphos	80.6	76.1	P/P	49 - 142
2060276	Fipronil	98.2	76.0	P/P	46 - 140
2060276	Fipronil Desulfinyl	83.7	70.6	P/P	60 - 130
2060276	Fipronil Sulfide	69.9	59.7	P/P	31 - 136
2060276	Fipronil Sulfone	77.7	65.5	P/P	16 - 136
2060276	Fonofos	90.9	84.5	P/P	55 - 129
2060276	Hexazinone	103	92.0	P/P	56 - 141
2060276	Malathion	77.5	75.7	P/P	56 - 135
2060276	Metalaxyl	98.8	83.5	P/P	54 - 135
2060276	Metolachlor	106	90.0	P/P	51 - 140
2060276	Metribuzin	154	132	P/P	45 - 254
2060276	Mevinphos	81.2	69.7	P/P	33 - 131
2060276	Molinate	79.1	70.5	P/P	14 - 98.0
2060276	Norflurazon	99.7	85.7	P/P	34 - 136
2060276	Oxadiazon	89.3	78.8	P/P	60 - 130
2060276	Parathion Ethyl	90.2	77.4	P/P	66 - 118
2060276	Parathion Methyl	117	106	P/P	64 - 136
2060276	Pendimethalin	101	85.9	P/P	59 - 144
2060276	Phorate	113	91.2	P/P	42 - 130
2060276	Prodiamine	95.7	77.0	P/P	60 - 130
2060276	Prometon	94.9	78.8	P/P	59 - 134
2060276	Prometryn	79.9	68.5	P/P	54 - 135
2060276	Tebuconazole	78.8	66.1	P/P	30 - 100
2060276	Terbufos	102	86.6	P/P	57 - 131
2060276	Terbutylazine	106	85.5	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P358378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059643	Acesulfame K	113	116	P/P	40 - 150
2059643	AMPA	140	144	P/P	40 - 150
2059643	Endothall	109	114	P/P	40 - 150
2059643	Glufosinate	70.4	68.9	P/P	40 - 150
2059643	Glyphosate	77.3	78.3	P/P	40 - 140
2059643	Sucralose	94.4	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059339	2,4-D	102	97.0	P/P	40 - 150
2059339	Acetaminophen	132	127	P/P	30 - 150
2059339	Bentazon	65.4	54.1	P/P	30 - 150
2059339	Carbamazepine	81.6	68.4	P/P	40 - 150
2059339	Diuron	71.1	60.3	P/P	40 - 150
2059339	Fenuron	87.8	77.7	P/P	40 - 150
2059339	Fluridone	95.1	74.8	P/P	40 - 150
2059339	Hydrocodone	95.5	82.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P358394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059339	Ibuprofen	94.3	91.2	P/P	40 - 150
2059339	Imazapyr	100	88.8	P/P	40 - 150
2059339	Imidacloprid	192	175	F/F	40 - 150
2059339	Linuron	73.9	62.8	P/P	40 - 150
2059339	MCPP	145	121	P/P	40 - 150
2059339	Naproxen	101	99.2	P/P	40 - 150
2059339	Primidone	101	100	P/P	40 - 150
2059339	Pyraclostrobin	83.3	69.9	P/P	40 - 150
2059339	Triclopyr	86.2	77.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060786	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060579	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Turbidity	0.308	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060347	Barium	1.08	Spike	P	0 - 20
2060347	Calcium	4.15	Spike	P	0 - 20
2060347	Iron	4.03	Spike	P	0 - 20
2060347	Magnesium	4.55	Spike	P	0 - 20
2060347	Potassium	3.86	Spike	P	0 - 20
2060347	Sodium	0.456	Spike	P	0 - 20
2060347	Zinc	1.46	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060347	Aluminum	1.28	Spike	P	0 - 20
2060347	Antimony	2.01	Spike	P	0 - 20
2060347	Arsenic	0.0787	Spike	P	0 - 20
2060347	Boron	2.14	Spike	P	0 - 20
2060347	Cadmium	0.916	Spike	P	0 - 20
2060347	Chromium	0.697	Spike	P	0 - 20
2060347	Copper	0.709	Spike	P	0 - 20
2060347	Lead	0.490	Spike	P	0 - 20
2060347	Nickel	0.255	Spike	P	0 - 20
2060347	Selenium	0.653	Spike	P	0 - 20
2060347	Silver	0.630	Spike	P	0 - 20
2060347	Thallium	0.895	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Chloride	1.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Sulfate	1.05	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060583	Ammonia-N	0.238	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060640	Kjeldahl Nitrogen	2.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060555	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060519	Total-P	1.90	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060453	O-Phosphate-P	2.07	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P358410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060276	Acetochlor	18.1	Spike	P	0 - 30
2060276	Alachlor	21.8	Spike	P	0 - 30
2060276	Ametryn	29.8	Spike	P	0 - 30
2060276	Atrazine	16.2	Spike	P	0 - 30
2060276	Atrazine Desethyl	20.4	Spike	P	0 - 30
2060276	Azinphos Methyl	14.6	Spike	P	0 - 30
2060276	Bromacil	16.3	Spike	P	0 - 30
2060276	Butylate	13.9	Spike	P	0 - 30
2060276	Chlorpyrifos Ethyl	8.19	Spike	P	0 - 30
2060276	Chlorpyrifos Methyl	10.3	Spike	P	0 - 30
2060276	Cyanazine	17.1	Spike	P	0 - 30
2060276	Demeton	15.2	Spike	P	0 - 30
2060276	Diazinon	21.1	Spike	P	0 - 30
2060276	Dimethenamid	16.5	Spike	P	0 - 30
2060276	Disulfoton	16.4	Spike	P	0 - 30
2060276	Dithiopyr	21.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P358410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060276	EPTC	14.6	Spike	P	0 - 30
2060276	Ethion	7.26	Spike	P	0 - 30
2060276	Ethoprop	18.8	Spike	P	0 - 30
2060276	Fenamiphos	5.78	Spike	P	0 - 30
2060276	Fipronil	17.9	Spike	P	0 - 30
2060276	Fipronil Desulfinyl	16.0	Spike	P	0 - 30
2060276	Fipronil Sulfide	12.2	Spike	P	0 - 30
2060276	Fipronil Sulfone	10.4	Spike	P	0 - 30
2060276	Fonofos	7.28	Spike	P	0 - 30
2060276	Hexazinone	11.0	Spike	P	0 - 30
2060276	Malathion	2.35	Spike	P	0 - 30
2060276	Metaxyl	16.9	Spike	P	0 - 30
2060276	Metolachlor	14.3	Spike	P	0 - 30
2060276	Metribuzin	15.4	Spike	P	0 - 30
2060276	Mevinphos	15.2	Spike	P	0 - 30
2060276	Molinate	11.5	Spike	P	0 - 30
2060276	Norflurazon	15.1	Spike	P	0 - 30
2060276	Oxadiazon	12.1	Spike	P	0 - 30
2060276	Parathion Ethyl	15.3	Spike	P	0 - 30
2060276	Parathion Methyl	10.3	Spike	P	0 - 30
2060276	Pendimethalin	16.2	Spike	P	0 - 30
2060276	Phorate	21.0	Spike	P	0 - 30
2060276	Prodiamine	21.7	Spike	P	0 - 30
2060276	Prometon	18.5	Spike	P	0 - 30
2060276	Prometryn	13.6	Spike	P	0 - 30
2060276	Simazine	18.2	Spike	P	0 - 30
2060276	Tebuconazole	16.0	Spike	P	0 - 30
2060276	Terbufos	16.4	Spike	P	0 - 30
2060276	Terbutylazine	21.8	Spike	P	0 - 30
LFB	Acetochlor	23.2	LCS	P	0 - 30
LFB	Alachlor	16.2	LCS	P	0 - 30
LFB	Ametryn	13.9	LCS	P	0 - 30
LFB	Atrazine	3.24	LCS	P	0 - 30
LFB	Atrazine Desethyl	12.9	LCS	P	0 - 30
LFB	Azinphos Methyl	25.6	LCS	P	0 - 30
LFB	Bromacil	6.09	LCS	P	0 - 30
LFB	Butylate	5.84	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.01	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	8.67	LCS	P	0 - 30
LFB	Cyanazine	38.4	LCS	F	0 - 30
LFB	Demeton	19.9	LCS	P	0 - 30
LFB	Diazinon	23.1	LCS	P	0 - 30
LFB	Dimethenamid	22.4	LCS	P	0 - 30
LFB	Disulfoton	11.4	LCS	P	0 - 30
LFB	Dithiopyr	17.6	LCS	P	0 - 30
LFB	EPTC	7.28	LCS	P	0 - 30
LFB	Ethion	40.7	LCS	F	0 - 30
LFB	Ethoprop	9.12	LCS	P	0 - 30
LFB	Fenamiphos	22.5	LCS	P	0 - 30
LFB	Fipronil	9.66	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	0.635	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P358410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	21.2	LCS	P	0 - 30
LFB	Fipronil Sulfone	0.842	LCS	P	0 - 30
LFB	Fonofos	5.34	LCS	P	0 - 30
LFB	Hexazinone	8.86	LCS	P	0 - 30
LFB	Malathion	13.7	LCS	P	0 - 30
LFB	Metalaxyl	2.38	LCS	P	0 - 30
LFB	Metolachlor	15.8	LCS	P	0 - 30
LFB	Metribuzin	11.9	LCS	P	0 - 30
LFB	Mevinphos	8.54	LCS	P	0 - 30
LFB	Molinate	14.9	LCS	P	0 - 30
LFB	Norflurazon	8.67	LCS	P	0 - 30
LFB	Oxadiazon	9.37	LCS	P	0 - 30
LFB	Parathion Ethyl	3.19	LCS	P	0 - 30
LFB	Parathion Methyl	18.3	LCS	P	0 - 30
LFB	Pendimethalin	2.30	LCS	P	0 - 30
LFB	Phorate	14.5	LCS	P	0 - 30
LFB	Prodiamine	5.88	LCS	P	0 - 30
LFB	Prometon	3.43	LCS	P	0 - 30
LFB	Prometryn	3.18	LCS	P	0 - 30
LFB	Simazine	6.59	LCS	P	0 - 30
LFB	Tebuconazole	17.6	LCS	P	0 - 30
LFB	Terbufos	9.20	LCS	P	0 - 30
LFB	Terbuthylazine	3.18	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059643	Acesulfame K	2.45	Spike	P	0 - 30
2059643	AMPA	2.99	Spike	P	0 - 30
2059643	Endothall	4.98	Spike	P	0 - 30
2059643	Glufosinate	2.15	Spike	P	0 - 30
2059643	Glyphosate	1.27	Spike	P	0 - 30
2059643	Sucralose	8.45	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059339	2,4-D	4.22	Spike	P	0 - 30
2059339	Acetaminophen	3.76	Spike	P	0 - 30
2059339	Bentazon	2.58	Spike	P	0 - 30
2059339	Carbamazepine	16.5	Spike	P	0 - 30
2059339	Diuron	15.7	Spike	P	0 - 30
2059339	Fenuron	12.2	Spike	P	0 - 30
2059339	Fluridone	4.94	Spike	P	0 - 30
2059339	Hydrocodone	14.7	Spike	P	0 - 30
2059339	Ibuprofen	3.34	Spike	P	0 - 30
2059339	Imazapyr	6.29	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P358394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059339	Imidacloprid	9.05	Spike	P	0 - 30
2059339	Linuron	16.2	Spike	P	0 - 30
2059339	MCP	18.0	Spike	P	0 - 30
2059339	Naproxen	1.31	Spike	P	0 - 30
2059339	Primidone	0.471	Spike	P	0 - 30
2059339	Pyraclostrobin	17.6	Spike	P	0 - 30
2059339	Triclopyr	10.4	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P358543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060582	Color (true)	2.78	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Total Alkalinity	0.489	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P358882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060552	TDS	2.16	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P358740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060552	TSS	3.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060579	Organic Carbon	0.0713	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: 2060587
Field Sample ID: 20030747

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	130	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.5	P	30 - 160
EPA 8321B	Diuron-d6	71.5	P	30 - 160
EPA 8321B	Endothall-d6	105	P	40 - 160
EPA 8321B	Endothall-d6	105	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	45.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	45.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	105	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	88.6	P	40 - 160
EPA 8321B	Sucralose-d6	88.6	P	40 - 160

Lab Sample ID: 2060594
Field Sample ID: 20030747

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	83.7	P	68 - 130
EPA 8270D	Terbufos-d10	92.4	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89266

Included Lab Sample IDs: 2060578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89268

Included Lab Sample IDs: 2060580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	98.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89269

Included Lab Sample IDs: 2060578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A89271

Included Lab Sample IDs: 2060587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	124	124	P/P	60 - 160
Endothall	99.2	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89308

Included Lab Sample IDs: 2060587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	120	124	P/P	60 - 160
Glufosinate	78.2	79.1	P/P	60 - 160
Glyphosate	94.4	87.8	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89359

Included Lab Sample IDs: 2060579

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89374

Included Lab Sample IDs: 2060579

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A89382
Included Lab Sample IDs: 2060594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Atrazine	109		P	80 - 120
Simazine	91.7		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A89395
Included Lab Sample IDs: 2060579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A89396
Included Lab Sample IDs: 2060588

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.1	99.9	P/P	90 - 110
Calcium	102	107	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Magnesium	102	104	P/P	90 - 110
Potassium	96.8	97.6	P/P	90 - 110
Sodium	94.5	95.9	P/P	90 - 110
Zinc	99.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A89402
Included Lab Sample IDs: 2060579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A89439
Included Lab Sample IDs: 2060588

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	98.0	99.5	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Boron	105	103	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	105	107	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Selenium	99.3	102	P/P	90 - 110
Silver	98.5	99.4	P/P	90 - 110
Thallium	99.9	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A89461
 Included Lab Sample IDs: 2060587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	90.0	P/P	60 - 160

Reference Method: SM 2320 B-97
 Run ID: A89482
 Included Lab Sample IDs: 2060578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A89482
 Included Lab Sample IDs: 2060578

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

Reference Method: EPA 8321B
 Run ID: A89502
 Included Lab Sample IDs: 2060587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	70.7	67.3	P/P	50 - 150
Acetaminophen	113	111	P/P	60 - 160
Bentazon	88.4	93.8	P/P	50 - 160
Carbamazepine	98.8	100	P/P	60 - 150
Diuron	98.1	92.5	P/P	60 - 150
Fenuron	92.8	82.6	P/P	60 - 150
Fluridone	102	107	P/P	60 - 160
Hydrocodone	108	92.8	P/P	60 - 150
Ibuprofen	113	94.7	P/P	50 - 160
Imazapyr	78.0	69.6	P/P	50 - 150
Imidacloprid	120	105	P/P	60 - 150
Linuron	97.3	101	P/P	60 - 150
MCPP	93.3	90.9	P/P	50 - 150
Naproxen	128	117	P/P	50 - 160
Primidone	90.4	101	P/P	60 - 150
Pyraclostrobin	111	112	P/P	60 - 150
Triclopyr	106	88.5	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A89517
 Included Lab Sample IDs: 2060578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	97.8	P/P	90 - 110
Sulfate	101	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A89520
Included Lab Sample IDs: 2060594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	104		P	80 - 120
Ametryn	97.7		P	80 - 120
Atrazine Desethyl	95.4		P	80 - 120
Azinphos Methyl	94.0		P	80 - 120
Bromacil	102		P	80 - 120
Butylate	101		P	80 - 120
Chlorpyrifos Ethyl	100		P	80 - 120
Chlorpyrifos Methyl	102		P	80 - 120
Cyanazine	83.5		P	80 - 120
Demeton	96.8		P	80 - 120
Diazinon	98.5		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	99.1		P	80 - 120
Dithiopyr	102		P	80 - 120
EPTC	98.9		P	80 - 120
Ethion	99.7		P	80 - 120
Ethoprop	99.2		P	80 - 120
Fenamiphos	98.1		P	80 - 120
Fipronil	99.9		P	80 - 120
Fipronil Desulfinyl	103		P	80 - 120
Fipronil Sulfide	100		P	80 - 120
Fipronil Sulfone	101		P	80 - 120
Fonofos	98.2		P	80 - 120
Hexazinone	100		P	80 - 120
Malathion	98.1		P	80 - 120
Metaxyl	103		P	80 - 120
Metolachlor	106		P	80 - 120
Metribuzin	79.9*		F	80 - 120
Mevinphos	102		P	80 - 120
Molinate	106		P	80 - 120
Norflurazon	100		P	80 - 120
Oxadiazon	103		P	80 - 120
Parathion Ethyl	93.9		P	80 - 120
Parathion Methyl	96.2		P	80 - 120
Pendimethalin	95.7		P	80 - 120
Phorate	98.3		P	80 - 120
Prodiamine	99.4		P	80 - 120
Prometon	99.2		P	80 - 120
Prometryn	99.7		P	80 - 120
Tebuconazole	99.7		P	80 - 120
Terbufos	97.7		P	80 - 120
Terbuthylazine	99.7		P	80 - 120

Reference Method: SM 5310 B-00
Run ID: A89523
Included Lab Sample IDs: 2060579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.0	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							0.308	
EPA 200.7 Rev. 4.4	Barium	101		101	100	99.5			1.08
	Calcium	111		108	113	108			4.15
	Iron	110		108	113	108			4.03
	Magnesium	112		110	115	104			4.55
	Potassium	102		104	108	99.4			3.86
	Sodium	103		97.9	98.6	98.8			0.456
	Zinc	102		103	102	103			1.46
EPA 200.8 Rev. 5.4	Aluminum	100		101	99.1	101			1.28
	Antimony	98.2		101	98.5	104			2.01
	Arsenic	104		106	106	109			0.0787
	Boron	106		109	107	109			2.14
	Cadmium	103		105	105	107			0.916
	Chromium	103		108	109	107			0.697
	Copper	102		107	107	104			0.709
	Lead	104		107	106	107			0.490
	Nickel	102		109	109	105			0.255
	Selenium	101		103	102	104			0.653
	Silver	101		102	102	106			0.630
	Thallium	102		106	107	108			0.895
EPA 300.0 Rev. 2.1	Chloride	98.3		97.4	95.4			1.13	
	Sulfate	97.1		97.0	95.3			1.05	
EPA 350.1 Rev. 2.0	Ammonia-N	100		101	101				0.238
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		99.2	103				2.36
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		98.5	98.5				0.0
EPA 365.1 Rev. 2.0	Total-P	106		104	106				1.90
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1		95.7	97.7				2.07
EPA 8270D	Acetochlor	88.4	112	117	97.9		23.2		18.1
	Alachlor	89.8	106	110	88.3		16.2		21.8
	Ametryn	105	121	137	101		13.9		29.8
	Atrazine	115	118				3.24		16.2
	Atrazine Desethyl	84.0	95.6	90.7	71.8		12.9		20.4
	Azinphos Methyl	104	135	144	124		25.6		14.6
	Bromacil	56.6	60.1	90.8	74.9		6.09		16.3
	Butylate	63.3	59.7	63.0	54.8		5.84		13.9
	Chlorpyrifos Ethyl	87.4	86.6	86.0	79.2		1.01		8.19
	Chlorpyrifos Methyl	85.9	93.7	92.6	83.6		8.67		10.3
	Cyanazine	110	162	159	134		38.4		17.1
	Demeton	84.0	102	103	88.7		19.9		15.2
	Diazinon	89.4	113	119	96.4		23.1		21.1
	Dimethenamid	84.5	106	111	86.5		22.4		16.5
	Disulfoton	88.2	98.8	102	86.8		11.4		16.4
	Dithiopyr	88.8	106	114	92.0		17.6		21.7
	EPTC	57.8	62.2	56.8	49.1		7.28		14.6
	Ethion	92.4	61.1	56.7	52.7		40.7		7.26
	Ethoprop	87.0	95.3	100	82.8		9.12		18.8
	Fenamiphos	86.6	69.1	80.6	76.1		22.5		5.78
	Fipronil	81.7	90.0	98.2	76.0		9.66		17.9
	Fipronil Desulfinyl	78.6	79.1	83.7	70.6		0.635		16.0
	Fipronil Sulfide	86.0	69.6	69.9	59.7		21.2		12.2
	Fipronil Sulfone	83.7	83.0	77.7	65.5		0.842		10.4
	Fonofos	84.7	89.3	90.9	84.5		5.34		7.28
	Hexazinone	108	99.1	103	92.0		8.86		11.0
	Malathion	94.8	82.7	77.5	75.7		13.7		2.35

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	93.5	91.3	98.8	83.5	2.38	16.9
	Metolachlor	90.1	106	106	90.0	15.8	14.3
	Metribuzin	142	160	154	132	11.9	15.4
	Mevinphos	81.2	74.6	81.2	69.7	8.54	15.2
	Molinate	67.8	78.7	79.1	70.5	14.9	11.5
	Norflurazon	84.0	91.6	99.7	85.7	8.67	15.1
	Oxadiazon	91.1	83.0	89.3	78.8	9.37	12.1
	Parathion Ethyl	88.2	85.4	90.2	77.4	3.19	15.3
	Parathion Methyl	102	122	117	106	18.3	10.3
	Pendimethalin	89.9	92.0	101	85.9	2.30	16.2
	Phorate	92.7	107	113	91.2	14.5	21.0
	Prodiamine	104	98.3	95.7	77.0	5.88	21.7
	Prometon	88.4	91.5	94.9	78.8	3.43	18.5
	Prometryn	90.7	87.8	79.9	68.5	3.18	13.6
	Simazine	101	94.4			6.59	18.2
	Tebuconazole	85.9	72.0	78.8	66.1	17.6	16.0
	Terbufos	88.7	97.3	102	86.6	9.20	16.4
	Terbuthylazine	95.9	99.0	106	85.5	3.18	21.8
EPA 8321B	2,4-D	87.2		102	97.0		4.22
	Acesulfame K	113		113	116		2.45
	Acetaminophen	89.9		132	127		3.76
	AMPA	91.1		140	144		2.99
	Bentazon	98.3		65.4	54.1		2.58
	Carbamazepine	88.5		81.6	68.4		16.5
	Diuron	78.2		71.1	60.3		15.7
	Endothall	98.8		109	114		4.98
	Fenuron	117		87.8	77.7		12.2
	Fluridone	104		95.1	74.8		4.94
	Glufosinate	71.3		70.4	68.9		2.15
	Glyphosate	79.3		77.3	78.3		1.27
	Hydrocodone	98.7		95.5	82.4		14.7
	Ibuprofen	85.3		94.3	91.2		3.34
	Imazapyr	92.7		100	88.8		6.29
	Imidacloprid	94.4		192	175		9.05
	Linuron	77.0		73.9	62.8		16.2
	MCPP	115		145	121		18.0
	Naproxen	95.6		101	99.2		1.31
	Primidone	95.5		101	100		0.471
SM 2120 B SM 2320 B-97 SM 2540 C-97 SM 2540 D-97 SM 4500 F-C-97 SM 5310 B-00	Pyraclostrobin	65.5		83.3	69.9		17.6
	Sucralose	99.4		94.4	103		8.45
	Triclopyr	75.5		86.2	77.7		10.4
	Color (true)	100				2.78	
	Total Alkalinity	104				0.489	
	TDS					2.16	
	TSS					3.17	
	Fluoride	98.2		97.0	97.0		0.0
	Organic Carbon	97.1		104			0.0713

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2060578

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	2060588
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2060588
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2060578
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2060578
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2060579
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2060579
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2060579
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2060579
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2060580
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2060594
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2060587
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2060587
SM 2120 B / E31780	True Color measured at 450 nm	2060578
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2060578
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2060578
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2060578
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2060578
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2060579

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	02/07/2019			02/07/2019 15:33	Adrian Shelby	2060578
EPA 200.7 Rev. 4.4	02/07/2019	02/07/2019 18:15	Elliott D. Healy	02/13/2019 13:01	Betina Topolski	2060588
EPA 200.8 Rev. 5.4	02/07/2019	02/07/2019 18:15	Elliott D. Healy	02/15/2019 03:37	Allison Taylor	2060588
EPA 300.0 Rev. 2.1	02/07/2019			02/20/2019 04:12	Lipi Saha	2060578
EPA 350.1 Rev. 2.0	02/07/2019			02/12/2019 13:59	Ping Hua	2060579
EPA 351.2 Rev. 2.0	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 12:33	Joseph Suarez	2060579
EPA 353.2 Rev. 2.0	02/07/2019			02/13/2019 10:53	Beverly Y. Sanders	2060579
EPA 365.1 Rev. 2.0	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 10:15	Rosalyn Ballman	2060579
EPA 365.1 Rev. 2.0 dissolved	02/07/2019			02/07/2019 15:58	Jhamieka S. Greenwood	2060580
EPA 8270D	02/07/2019	02/07/2019 11:30	Rasheda Ghaffari	02/08/2019 23:10	Vandana T. Nagar	2060594
	02/07/2019	02/07/2019 11:30	Rasheda Ghaffari	02/12/2019 18:31	Vandana T. Nagar	2060594
EPA 8321B	02/07/2019	02/07/2019 12:00	Hoor Shaik	02/19/2019 13:57	Juyoung Kim	2060587
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 03:18	Mohammad Ghaffari	2060587
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 11:44	Mohammad Ghaffari	2060587
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 19:55	Mohammad Ghaffari	2060587
SM 2120 B	02/07/2019			02/07/2019 17:19	Chelsea Hernandez	2060578
SM 2320 B-97	02/07/2019			02/15/2019 02:53	Dale L. Simmons	2060578
SM 2540 C-97	02/07/2019			02/08/2019 17:55	Mariam Hanna	2060578
SM 2540 D-97	02/07/2019			02/08/2019 18:20	Mariam Hanna	2060578
SM 4500 F-C-97	02/07/2019			02/15/2019 02:53	Dale L. Simmons	2060578
SM 5310 B-00	02/07/2019			02/18/2019 20:12	Chelsea Hernandez	2060579