

Chemical Analysis Report

NW-DIST-2019-02-15-02

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

Event Description: **Bioassessment**
Request ID: **RQ-2019-02-11-27**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 05-MAR-2019 12:03

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: WILLIAMS CREEK BELOW FRANKFORT AVENUE

Collection Date/Time: 02/14/2019 14:15

Field ID: G4NW0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063092	EPA 180.1 Rev. 2.0	Turbidity	7.8	A	NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P359573	
		Sulfate	4.8		mg SO4/L	P359575	
	SM 2120 B	Color (true)	93		PCU	P359015	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	55		mg/L	P359534	
	SM 2540 D-97	TSS	12		mg/L	P359440	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P359392	
2063093	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P359344	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P359234	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P359359	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P359141	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P359418	
2063094	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359027	
2063116	EPA 8321B	2,4-D	0.0020	U	ug/L	P359132	
		Acesulfame K**	0.10	U	ug/L	P358980	
		AMPA**	0.10	U	ug/L	P358980	
		Sucralose**	1.5		ug/L	P358980	
		Acetaminophen**	0.0080	U	ug/L	P359132	
		Endothall**	0.25	U	ug/L	P358980	
		Glufosinate**	0.10	U	ug/L	P358980	
		Bentazon	8.0E-04	U	ug/L	P359132	
		Glyphosate**	0.10	U	ug/L	P358980	
		Carbamazepine**	8.0E-04	U	ug/L	P359132	
		Diuron	0.0020	U	ug/L	P359132	
		Fenuron	0.016	U	ug/L	P359132	
		Imazapyr**	0.0040	U	ug/L	P359132	
		Imidacloprid	0.016		ug/L	P359132	MS
		Linuron	0.0040	U	ug/L	P359132	
		MCPP	0.0020	U	ug/L	P359132	
		Primidone**	0.0040	U	ug/L	P359132	
		Pyraclostrobin**	0.0020	U	ug/L	P359132	
		Triclopyr**	0.0040	U	ug/L	P359132	
		Fluridone**	8.0E-04	U	ug/L	P359132	
		Hydrocodone**	0.0020	U	ug/L	P359132	
		Naproxen**	0.0080	U	ug/L	P359132	
		Ibuprofen**	0.020	U	ug/L	P359132	
2063123	EPA 200.7 Rev. 4.4	Barium	10.0		ug/L	P359105	
		Calcium	1.60		mg/L	P359105	
		Iron	1.19E+03		ug/L	P359105	
		Magnesium	0.78		mg/L	P359105	
		Potassium	0.87	I	mg/L	P359105	

Field ID: G4NW0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063123	EPA 200.7 Rev. 4.4	Sodium	9.9		mg/L	P359105	
		Zinc	5.0	U	ug/L	P359105	
	EPA 200.8 Rev. 5.4	Aluminum	750		ug/L	P359105	
		Antimony	0.050	U	ug/L	P359105	
		Arsenic	0.46		ug/L	P359105	
		Boron**	31.2		ug/L	P359105	
		Cadmium	0.020	U	ug/L	P359105	
		Chromium	0.67	I	ug/L	P359105	
		Copper	0.41	I	ug/L	P359105	
		Lead	0.51		ug/L	P359105	
		Nickel	0.50	U	ug/L	P359105	
		Selenium	0.20	U	ug/L	P359105	
		Silver	0.010	U	ug/L	P359105	
		Thallium	0.10	U	ug/L	P359105	
2063124	EPA 8270D	Acetochlor	0.25	U	ng/L	P359172	
		Alachlor	0.25	U	ng/L	P359172	
		Ametryn	0.60	U	ng/L	P359172	
		Atrazine	0.63	IJ	ng/L	P359172	RPD
		Atrazine Desethyl	1.5	U	ng/L	P359172	
		Azinphos Methyl	2.3	U	ng/L	P359172	
		Bromacil	7.2		ng/L	P359172	
		Butylate	0.40	U	ng/L	P359172	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P359172	
		Chlorpyrifos Methyl	0.10	U	ng/L	P359172	
		Cyanazine	3.3	U	ng/L	P359172	
		Demeton	7.0	U	ng/L	P359172	
		Diazinon	0.13	U	ng/L	P359172	
		Dimethenamid**	0.10	U	ng/L	P359172	
		Disulfoton	0.50	U	ng/L	P359172	
		Dithiopyr**	0.10	U	ng/L	P359172	
		EPTC	1.3	U	ng/L	P359172	
		Ethion	0.15	U	ng/L	P359172	
		Ethoprop	0.10	U	ng/L	P359172	
		Fenamiphos	0.50	U	ng/L	P359172	
		Fipronil	0.25	U	ng/L	P359172	
		Fipronil Desulfinyl**	0.13	UJ	ng/L	P359172	LCS, MS
		Fipronil Sulfide	0.91		ng/L	P359172	
		Fipronil Sulfone	1.3		ng/L	P359172	
		Fonofos	0.20	U	ng/L	P359172	
		Hexazinone	0.50	U	ng/L	P359172	
		Malathion	0.35	U	ng/L	P359172	
		Metaxyl	0.30	U	ng/L	P359172	
		Metolachlor	0.50	U	ng/L	P359172	
		Metribuzin	0.75	U	ng/L	P359172	
		Mevinphos	0.50	U	ng/L	P359172	

Field ID: G4NW0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063124	EPA 8270D	Molinate	0.30	U	ng/L	P359172	
		Norflurazon	0.50	U	ng/L	P359172	
		Oxadiazon**	0.10	U	ng/L	P359172	
		Parathion Ethyl	0.25	U	ng/L	P359172	
		Parathion Methyl	0.55	U	ng/L	P359172	
		Pendimethalin	1.0	U	ng/L	P359172	
		Phorate	0.25	U	ng/L	P359172	
		Prodiamine**	0.18	U	ng/L	P359172	
		Prometon	0.90	U	ng/L	P359172	
		Prometryn	0.20	U	ng/L	P359172	
		Simazine	0.50	U	ng/L	P359172	
		Tebuconazole**	0.50	U	ng/L	P359172	
		Terbufos	0.10	U	ng/L	P359172	
		Terbuthylazine	0.43	U	ng/L	P359172	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8270D: 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: P359009

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

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: P359105

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: P359573

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

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: P359234

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359359

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359027

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

Reference Method: EPA 8270D
 Batch ID: P359172

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: P359172

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

Reference Method: EPA 8321B
Batch ID: P358980

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: P359132

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: P359015

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359383

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

Reference Method: SM 2540 C-97
Batch ID: P359534

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359440

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359418

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: P359105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	98.4		P	85 - 115
Iron	105		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	99.8		P	85 - 115
Sodium	97.6		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	107		P	85 - 115
Boron	109		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	105		P	85 - 115
Copper	108		P	85 - 115
Lead	107		P	85 - 115
Nickel	105		P	85 - 115
Selenium	102		P	85 - 115
Silver	103		P	85 - 115
Thallium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.1		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359359

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359027

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

Reference Method: EPA 8270D
 Batch ID: P359172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	87.0	107	P/P	71 - 121
Alachlor	86.5	101	P/P	72 - 119
Ametryn	87.5	111	P/P	47 - 144
Atrazine	79.9	122	P/P	75 - 123
Atrazine Desethyl	72.7	86.8	P/P	45 - 133
Azinphos Methyl	105	126	P/P	66 - 165
Bromacil	69.6	78.6	P/P	43 - 123
Butylate	46.8	57.4	P/P	27 - 83.0
Chlorpyrifos Ethyl	90.0	107	P/P	70 - 117
Chlorpyrifos Methyl	86.4	103	P/P	71 - 120
Cyanazine	97.0	109	P/P	34 - 264
Demeton	77.3	93.0	P/P	41 - 122
Diazinon	84.7	104	P/P	70 - 127
Dimethenamid	86.9	103	P/P	60 - 130
Disulfoton	90.2	109	P/P	56 - 127
Dithiopyr	85.5	102	P/P	60 - 130
EPTC	42.2	52.8	P/P	24 - 84.0
Ethion	81.6	87.3	P/P	53 - 132
Ethoprop	77.9	95.0	P/P	57 - 117
Fenamiphos	72.2	78.6	P/P	55 - 136
Fipronil	65.9	74.6	P/P	64 - 126
Fipronil Desulfinyl	57.6	64.7	F/P	60 - 130
Fipronil Sulfide	65.6	69.5	P/P	57 - 120
Fipronil Sulfone	66.7	70.7	P/P	52 - 115
Fonofos	80.1	99.8	P/P	61 - 121
Hexazinone	87.8	113	P/P	62 - 131
Malathion	90.6	107	P/P	67 - 126
Metalaxyl	83.3	98.8	P/P	54 - 128
Metolachlor	85.1	103	P/P	71 - 118
Metribuzin	161	189	P/P	42 - 221
Mevinphos	66.4	80.8	P/P	45 - 114
Molinate	62.3	75.3	P/P	33 - 91.0
Norflurazon	68.3	76.8	P/P	60 - 123
Oxadiazon	80.8	97.4	P/P	60 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P359172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	80.0	95.1	P/P	73 - 111
Parathion Methyl	92.9	117	P/P	74 - 126
Pendimethalin	85.5	105	P/P	63 - 131
Phorate	86.7	106	P/P	54 - 115
Prodiamine	83.5	90.1	P/P	60 - 130
Prometon	78.8	94.4	P/P	61 - 120
Prometryn	82.0	91.6	P/P	62 - 126
Simazine	91.0	114	P/P	75 - 126
Tebuconazole	60.1	68.0	P/P	30 - 100
Terbufos	83.7	102	P/P	65 - 116
Terbutylazine	85.3	107	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P358980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	87.8		P	40 - 150
Endothall	92.3		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	100		P	40 - 140
Sucralose	95.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.2		P	40 - 150
Acetaminophen	95.1		P	30 - 150
Bentazon	115		P	30 - 150
Carbamazepine	92.2		P	40 - 150
Diuron	82.7		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	88.5		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	74.2		P	40 - 150
MCPP	99.7		P	40 - 150
Naproxen	75.6		P	40 - 150
Primidone	104		P	40 - 150
Pyraclostrobin	69.0		P	40 - 150
Triclopyr	64.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359015

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: P359383

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

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063032	Barium	99.8		P	80 - 120
2063032	Calcium	98.6		P	80 - 120
2063032	Iron	104		P	80 - 120
2063032	Magnesium	102		P	80 - 120
2063032	Potassium	94.6		P	80 - 120
2063032	Sodium	100		P	80 - 120
2063032	Zinc	101		P	80 - 120
2063047	Barium	104	105	P/P	80 - 120
2063047	Calcium	98.3		P	80 - 120
2063047	Iron	104	109	P/P	80 - 120
2063047	Magnesium	104	110	P/P	80 - 120
2063047	Potassium	97.8	103	P/P	80 - 120
2063047	Sodium	98.6		P	80 - 120
2063047	Zinc	107	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063032	Aluminum	100		P	80 - 120
2063032	Antimony	105		P	80 - 120
2063032	Arsenic	110		P	80 - 120
2063032	Boron	106		P	80 - 120
2063032	Cadmium	108		P	80 - 120
2063032	Chromium	105		P	80 - 120
2063032	Copper	108		P	80 - 120
2063032	Lead	108		P	80 - 120
2063032	Nickel	104		P	80 - 120
2063032	Selenium	102		P	80 - 120
2063032	Silver	103		P	80 - 120
2063032	Thallium	112		P	80 - 120
2063047	Aluminum	99.8	99.3	P/P	80 - 120
2063047	Antimony	103	103	P/P	80 - 120
2063047	Arsenic	107	107	P/P	80 - 120
2063047	Boron	106	104	P/P	80 - 120
2063047	Cadmium	106	107	P/P	80 - 120
2063047	Chromium	108	107	P/P	80 - 120
2063047	Copper	108	107	P/P	80 - 120
2063047	Lead	107	107	P/P	80 - 120
2063047	Nickel	104	105	P/P	80 - 120
2063047	Selenium	101	101	P/P	80 - 120
2063047	Silver	101	102	P/P	80 - 120
2063047	Thallium	111	110	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063007	Chloride	94.5		P	90 - 110
2063214	Chloride	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P359575

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063007	Sulfate	99.0		P	90 - 110
2063214	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P359344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063016	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P359234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063110	Kjeldahl Nitrogen	105	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063079	NO2NO3-N	98.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063110	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063167	O-Phosphate-P	96.9	98.2	P/P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P359172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062408	Acetochlor	90.1	101	P/P	63 - 129
2062408	Alachlor	85.9	98.6	P/P	65 - 127
2062408	Ametryn	86.6	99.5	P/P	40 - 164
2062408	Atrazine	106	117	P/P	66 - 135
2062408	Atrazine Desethyl	57.7	69.0	P/P	14 - 157
2062408	Azinphos Methyl	99.7	118	P/P	49 - 180
2062408	Bromacil	65.6	66.7	P/P	48 - 130
2062408	Butylate	36.4	42.6	P/P	10 - 94.0
2062408	Chlorpyrifos Ethyl	92.5	103	P/P	58 - 123
2062408	Chlorpyrifos Methyl	87.4	100	P/P	58 - 125
2062408	Cyanazine	83.7	90.3	P/P	24 - 253
2062408	Demeton	75.2	87.9	P/P	25 - 149
2062408	Diazinon	84.8	104	P/P	59 - 144
2062408	Dimethenamid	87.9	99.0	P/P	60 - 130
2062408	Disulfoton	96.6	101	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P359172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062408	Dithiopyr	86.7	98.0	P/P	60 - 130
2062408	EPTC	33.5	38.5	P/P	10 - 92.0
2062408	Ethion	86.6	79.9	P/P	30 - 148
2062408	Ethoprop	77.3	88.7	P/P	50 - 130
2062408	Fenamiphos	66.1	76.0	P/P	49 - 142
2062408	Fipronil	58.4	65.2	P/P	46 - 140
2062408	Fipronil Desulfinyl	47.1	54.4	F/F	60 - 130
2062408	Fipronil Sulfide	54.9	61.6	P/P	31 - 136
2062408	Fipronil Sulfone	50.4	57.7	P/P	16 - 136
2062408	Fonofos	81.1	91.0	P/P	55 - 129
2062408	Hexazinone	92.6	99.9	P/P	56 - 141
2062408	Malathion	95.1	104	P/P	56 - 135
2062408	Metalaxyl	82.8	93.1	P/P	54 - 135
2062408	Metolachlor	86.7	100	P/P	51 - 140
2062408	Metribuzin	157	192	P/P	45 - 254
2062408	Mevinphos	65.5	76.8	P/P	33 - 131
2062408	Molinate	58.5	67.2	P/P	14 - 98.0
2062408	Norflurazon	55.5	63.6	P/P	34 - 136
2062408	Oxadiazon	85.3	93.6	P/P	60 - 130
2062408	Parathion Ethyl	86.9	94.9	P/P	66 - 118
2062408	Parathion Methyl	98.4	110	P/P	64 - 136
2062408	Pendimethalin	90.3	99.6	P/P	59 - 144
2062408	Phorate	86.9	94.8	P/P	42 - 130
2062408	Prodiamine	82.9	103	P/P	60 - 130
2062408	Prometon	83.3	85.1	P/P	59 - 134
2062408	Prometryn	78.8	86.7	P/P	54 - 135
2062408	Simazine	102	110	P/P	53 - 156
2062408	Tebuconazole	63.0	64.1	P/P	30 - 100
2062408	Terbufos	87.3	98.7	P/P	57 - 131
2062408	Terbutylazine	86.8	100	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P358980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062987	Acesulfame K	86.1	86.3	P/P	40 - 150
2062987	AMPA	67.8	67.6	P/P	40 - 150
2062987	Endothall	94.2	94.2	P/P	40 - 150
2062987	Glufosinate	77.8	71.7	P/P	40 - 150
2062987	Glyphosate	83.1	77.8	P/P	40 - 140
2062987	Sucralose	98.0	96.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063322	2,4-D	104	104	P/P	40 - 150
2063322	Acetaminophen	125	125	P/P	30 - 150
2063322	Bentazon	90.8	105	P/P	30 - 150
2063322	Carbamazepine	81.5	84.8	P/P	40 - 150
2063322	Diuron	69.4	81.9	P/P	40 - 150
2063322	Fenuron	88.7	86.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063322	Fluridone	113	122	P/P	40 - 150
2063322	Hydrocodone	100	117	P/P	40 - 150
2063322	Ibuprofen	86.0	73.8	P/P	40 - 150
2063322	Imazapyr	130	149	P/P	40 - 150
2063322	Imidacloprid	202	215	F/F	40 - 150
2063322	Linuron	72.5	82.3	P/P	40 - 150
2063322	MCP	130	140	P/P	40 - 150
2063322	Naproxen	87.2	87.2	P/P	40 - 150
2063322	Primidone	104	109	P/P	40 - 150
2063322	Pyraclostrobin	72.1	69.5	P/P	40 - 150
2063322	Triclopyr	85.8	86.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062967	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062970	Organic Carbon	96.9	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063092	Turbidity	2.95	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063047	Barium	0.382	Spike	P	0 - 20
2063047	Calcium	3.81	Spike	P	0 - 20
2063047	Iron	4.67	Spike	P	0 - 20
2063047	Magnesium	4.09	Spike	P	0 - 20
2063047	Potassium	4.08	Spike	P	0 - 20
2063047	Sodium	4.65	Spike	P	0 - 20
2063047	Zinc	0.155	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063047	Aluminum	0.462	Spike	P	0 - 20
2063047	Antimony	0.683	Spike	P	0 - 20
2063047	Arsenic	0.489	Spike	P	0 - 20
2063047	Boron	1.24	Spike	P	0 - 20
2063047	Cadmium	0.609	Spike	P	0 - 20
2063047	Chromium	0.737	Spike	P	0 - 20
2063047	Copper	0.159	Spike	P	0 - 20
2063047	Lead	0.746	Spike	P	0 - 20
2063047	Nickel	0.418	Spike	P	0 - 20
2063047	Selenium	0.0360	Spike	P	0 - 20
2063047	Silver	0.379	Spike	P	0 - 20
2063047	Thallium	0.392	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063007	Chloride	0.254	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063007	Sulfate	0.544	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063016	Ammonia-N	0.935	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063110	Kjeldahl Nitrogen	4.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063079	NO2NO3-N	0.443	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063110	Total-P	0.228	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063167	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P359172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062408	Acetochlor	11.6	Spike	P	0 - 30
2062408	Alachlor	13.8	Spike	P	0 - 30
2062408	Ametryn	13.8	Spike	P	0 - 30
2062408	Atrazine	8.78	Spike	P	0 - 30
2062408	Atrazine Desethyl	17.9	Spike	P	0 - 30
2062408	Azinphos Methyl	16.7	Spike	P	0 - 30
2062408	Bromacil	0.723	Spike	P	0 - 30
2062408	Butylate	15.7	Spike	P	0 - 30
2062408	Chlorpyrifos Ethyl	11.1	Spike	P	0 - 30
2062408	Chlorpyrifos Methyl	13.8	Spike	P	0 - 30
2062408	Cyanazine	7.56	Spike	P	0 - 30
2062408	Demeton	15.5	Spike	P	0 - 30
2062408	Diazinon	20.3	Spike	P	0 - 30
2062408	Dimethenamid	11.9	Spike	P	0 - 30
2062408	Disulfoton	3.91	Spike	P	0 - 30
2062408	Dithiopyr	12.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062408	EPTC	13.9	Spike	P	0 - 30
2062408	Ethion	8.05	Spike	P	0 - 30
2062408	Ethoprop	13.7	Spike	P	0 - 30
2062408	Fenamiphos	14.0	Spike	P	0 - 30
2062408	Fipronil	11.0	Spike	P	0 - 30
2062408	Fipronil Desulfinyl	14.4	Spike	P	0 - 30
2062408	Fipronil Sulfide	11.4	Spike	P	0 - 30
2062408	Fipronil Sulfone	13.4	Spike	P	0 - 30
2062408	Fonofos	11.4	Spike	P	0 - 30
2062408	Hexazinone	7.63	Spike	P	0 - 30
2062408	Malathion	9.24	Spike	P	0 - 30
2062408	Metaxyl	11.8	Spike	P	0 - 30
2062408	Metolachlor	13.7	Spike	P	0 - 30
2062408	Metribuzin	19.7	Spike	P	0 - 30
2062408	Mevinphos	15.9	Spike	P	0 - 30
2062408	Molinate	13.9	Spike	P	0 - 30
2062408	Norflurazon	13.6	Spike	P	0 - 30
2062408	Oxadiazon	9.34	Spike	P	0 - 30
2062408	Parathion Ethyl	8.87	Spike	P	0 - 30
2062408	Parathion Methyl	11.5	Spike	P	0 - 30
2062408	Pendimethalin	9.82	Spike	P	0 - 30
2062408	Phorate	8.64	Spike	P	0 - 30
2062408	Prodiamine	21.5	Spike	P	0 - 30
2062408	Prometon	2.07	Spike	P	0 - 30
2062408	Prometryn	9.55	Spike	P	0 - 30
2062408	Simazine	4.97	Spike	P	0 - 30
2062408	Tebuconazole	1.63	Spike	P	0 - 30
2062408	Terbufos	12.2	Spike	P	0 - 30
2062408	Terbutylazine	14.1	Spike	P	0 - 30
LFB	Acetochlor	20.8	LCS	P	0 - 30
LFB	Alachlor	15.7	LCS	P	0 - 30
LFB	Ametryn	24.0	LCS	P	0 - 30
LFB	Atrazine	41.7	LCS	F	0 - 30
LFB	Atrazine Desethyl	17.6	LCS	P	0 - 30
LFB	Azinphos Methyl	18.0	LCS	P	0 - 30
LFB	Bromacil	12.1	LCS	P	0 - 30
LFB	Butylate	20.3	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	17.4	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	17.3	LCS	P	0 - 30
LFB	Cyanazine	11.3	LCS	P	0 - 30
LFB	Demeton	18.4	LCS	P	0 - 30
LFB	Diazinon	20.0	LCS	P	0 - 30
LFB	Dimethenamid	17.2	LCS	P	0 - 30
LFB	Disulfoton	19.1	LCS	P	0 - 30
LFB	Dithiopyr	17.7	LCS	P	0 - 30
LFB	EPTC	22.2	LCS	P	0 - 30
LFB	Ethion	6.70	LCS	P	0 - 30
LFB	Ethoprop	19.7	LCS	P	0 - 30
LFB	Fenamiphos	8.47	LCS	P	0 - 30
LFB	Fipronil	12.3	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	11.6	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	5.69	LCS	P	0 - 30
LFB	Fipronil Sulfone	5.81	LCS	P	0 - 30
LFB	Fonofos	21.9	LCS	P	0 - 30
LFB	Hexazinone	24.8	LCS	P	0 - 30
LFB	Malathion	16.9	LCS	P	0 - 30
LFB	Metalaxyl	17.0	LCS	P	0 - 30
LFB	Metolachlor	18.7	LCS	P	0 - 30
LFB	Metribuzin	16.0	LCS	P	0 - 30
LFB	Mevinphos	19.5	LCS	P	0 - 30
LFB	Molinate	18.8	LCS	P	0 - 30
LFB	Norflurazon	11.7	LCS	P	0 - 30
LFB	Oxadiazon	18.6	LCS	P	0 - 30
LFB	Parathion Ethyl	17.3	LCS	P	0 - 30
LFB	Parathion Methyl	23.1	LCS	P	0 - 30
LFB	Pendimethalin	20.6	LCS	P	0 - 30
LFB	Phorate	19.9	LCS	P	0 - 30
LFB	Prodiamine	7.69	LCS	P	0 - 30
LFB	Prometon	18.0	LCS	P	0 - 30
LFB	Prometryn	11.0	LCS	P	0 - 30
LFB	Simazine	22.5	LCS	P	0 - 30
LFB	Tebuconazole	12.3	LCS	P	0 - 30
LFB	Terbufos	19.8	LCS	P	0 - 30
LFB	Terbuthylazine	22.6	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062987	Acesulfame K	0.222	Spike	P	0 - 30
2062987	AMPA	0.353	Spike	P	0 - 30
2062987	Endothall	0.0242	Spike	P	0 - 30
2062987	Glufosinate	8.12	Spike	P	0 - 30
2062987	Glyphosate	5.80	Spike	P	0 - 30
2062987	Sucralose	1.44	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063322	2,4-D	0.0714	Spike	P	0 - 30
2063322	Acetaminophen	0.329	Spike	P	0 - 30
2063322	Bentazon	9.96	Spike	P	0 - 30
2063322	Carbamazepine	3.92	Spike	P	0 - 30
2063322	Diuron	15.6	Spike	P	0 - 30
2063322	Fenuron	1.95	Spike	P	0 - 30
2063322	Fluridone	6.46	Spike	P	0 - 30
2063322	Hydrocodone	15.6	Spike	P	0 - 30
2063322	Ibuprofen	15.3	Spike	P	0 - 30
2063322	Imazapyr	8.26	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P359132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063322	Imidacloprid	5.85	Spike	P	0 - 30
2063322	Linuron	12.7	Spike	P	0 - 30
2063322	MCP	7.54	Spike	P	0 - 30
2063322	Naproxen	0.00172	Spike	P	0 - 30
2063322	Primidone	4.77	Spike	P	0 - 30
2063322	Pyraclostrobin	3.61	Spike	P	0 - 30
2063322	Triclopyr	0.627	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P359015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063076	Color (true)	1.93	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P359383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062967	Total Alkalinity	0.525	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P359534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063015	TDS	7.54	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P359392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062967	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P359418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062970	Organic Carbon	0.501	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: 2063116
Field Sample ID: G4NW0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	127	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.3	P	30 - 160
EPA 8321B	Diuron-d6	63.3	P	30 - 160
EPA 8321B	Endothall-d6	99.1	P	40 - 160
EPA 8321B	Endothall-d6	99.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	81.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	81.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	77.6	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	99.4	P	40 - 160
EPA 8321B	Sucralose-d6	99.4	P	40 - 160

Lab Sample ID: 2063124
Field Sample ID: G4NW0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	88.9	P	68 - 130
EPA 8270D	Terbufos-d10	89.6	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89446

Included Lab Sample IDs: 2063092

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

Reference Method: SM 2120 B

Run ID: A89448

Included Lab Sample IDs: 2063092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89450

Included Lab Sample IDs: 2063094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89512

Included Lab Sample IDs: 2063123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	98.5	P/P	90 - 110
Calcium	96.8	97.9	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.3	97.7	P/P	90 - 110
Sodium	97.8	98.7	P/P	90 - 110
Zinc	100	98.0	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A89543

Included Lab Sample IDs: 2063124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.9		P	80 - 120
Alachlor	102		P	80 - 120
Ametryn	98.6		P	80 - 120
Atrazine	103		P	80 - 120
Atrazine Desethyl	97.2		P	80 - 120
Azinphos Methyl	98.5		P	80 - 120
Bromacil	100		P	80 - 120
Butylate	95.5		P	80 - 120
Chlorpyrifos Ethyl	96.8		P	80 - 120
Chlorpyrifos Methyl	97.1		P	80 - 120
Cyanazine	90.4		P	80 - 120
Demeton	98.7		P	80 - 120
Diazinon	98.5		P	80 - 120
Dimethenamid	100		P	80 - 120
Disulfoton	98.2		P	80 - 120
Dithiopyr	99.8		P	80 - 120
EPTC	97.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
 Run ID: A89543
 Included Lab Sample IDs: 2063124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ethion	99.8		P	80 - 120
Ethoprop	98.2		P	80 - 120
Fenamiphos	100		P	80 - 120
Fipronil	98.2		P	80 - 120
Fipronil Desulfinyl	103		P	80 - 120
Fipronil Sulfide	96.8		P	80 - 120
Fipronil Sulfone	99.5		P	80 - 120
Fonofos	97.5		P	80 - 120
Hexazinone	100		P	80 - 120
Malathion	95.6		P	80 - 120
Metaxyl	102		P	80 - 120
Metolachlor	99.6		P	80 - 120
Metribuzin	90.4		P	80 - 120
Mevinphos	99.1		P	80 - 120
Molinate	96.6		P	80 - 120
Norflurazon	98.1		P	80 - 120
Oxadiazon	100		P	80 - 120
Parathion Ethyl	94.5		P	80 - 120
Parathion Methyl	98.2		P	80 - 120
Pendimethalin	100		P	80 - 120
Phorate	97.0		P	80 - 120
Prodiamine	97.6		P	80 - 120
Prometon	101		P	80 - 120
Prometryn	98.7		P	80 - 120
Simazine	101		P	80 - 120
Tebuconazole	97.9		P	80 - 120
Terbufos	96.6		P	80 - 120
Terbutylazine	98.4		P	80 - 120

Reference Method: EPA 8321B
 Run ID: A89547
 Included Lab Sample IDs: 2063116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	78.2	84.7	P/P	60 - 160
Glufosinate	99.2	99.5	P/P	60 - 160
Glyphosate	101	110	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A89567
 Included Lab Sample IDs: 2063093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A89577
 Included Lab Sample IDs: 2063093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89583

Included Lab Sample IDs: 2063093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.6	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89586

Included Lab Sample IDs: 2063093

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

Reference Method: SM 2320 B-97

Run ID: A89593

Included Lab Sample IDs: 2063092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	108	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89593

Included Lab Sample IDs: 2063092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89599

Included Lab Sample IDs: 2063116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	93.9	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89603

Included Lab Sample IDs: 2063093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.5	94.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89610

Included Lab Sample IDs: 2063116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	71.7	95.5	P/P	50 - 150
Acetaminophen	107	113	P/P	60 - 160
Bentazon	70.5	79.2	P/P	50 - 160
Carbamazepine	99.2	98.8	P/P	60 - 150
Diuron	107	105	P/P	60 - 150
Fenuron	99.5	105	P/P	60 - 150
Fluridone	103	104	P/P	60 - 160
Hydrocodone	103	96.3	P/P	60 - 150
Ibuprofen	74.3	79.9	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89610

Included Lab Sample IDs: 2063116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	92.5	98.7	P/P	50 - 150
Imidacloprid	101	95.4	P/P	60 - 150
Linuron	98.1	105	P/P	60 - 150
MCPP	98.9	104	P/P	50 - 150
Naproxen	119	116	P/P	50 - 160
Primidone	108	100	P/P	60 - 150
Pyraclostrobin	98.8	99.3	P/P	60 - 150
Triclopyr	94.7	107	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2063123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.6	99.5	P/P	90 - 110
Antimony	98.6	98.4	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Boron	105	104	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Copper	107	108	P/P	90 - 110
Lead	104	104	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	99.5	98.9	P/P	90 - 110
Silver	97.9	98.0	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063092

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

Reference Method: EPA 8321B

Run ID: A89676

Included Lab Sample IDs: 2063116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	127	91.8	P/P	60 - 160
Endothall	94.1	104	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.95	
EPA 200.7 Rev. 4.4	Barium	102		99.8	104	105		0.382
	Calcium	98.4		98.6	98.3			3.81
	Iron	105		104	104	109		4.67
	Magnesium	108		102	104	110		4.09
	Potassium	99.8		94.6	97.8	103		4.08
	Sodium	97.6		100	98.6			4.65
	Zinc	101		101	107	107		0.155
EPA 200.8 Rev. 5.4	Aluminum	103		100	99.8	99.3		0.462
	Antimony	102		105	103	103		0.683
	Arsenic	107		110	107	107		0.489
	Boron	109		106	106	104		1.24
	Cadmium	107		108	106	107		0.609
	Chromium	105		105	108	107		0.737
	Copper	108		108	108	107		0.159
	Lead	107		108	107	107		0.746
	Nickel	105		104	104	105		0.418
	Selenium	102		102	101	101		0.0360
	Silver	103		103	101	102		0.379
	Thallium	107		112	111	110		0.392
EPA 300.0 Rev. 2.1	Chloride	100		94.5	99.4		0.254	
	Sulfate	101		99.0	101		0.544	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4		98.0	99.0			0.935
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1		105	97.7			4.83
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		98.9	98.4			0.443
EPA 365.1 Rev. 2.0	Total-P	105		102	102			0.228
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7		96.9	98.2			1.33
EPA 8270D	Acetochlor	87.0	107	90.1	101	20.8		11.6
	Alachlor	86.5	101	85.9	98.6	15.7		13.8
	Ametryn	87.5	111	86.6	99.5	24.0		13.8
	Atrazine	79.9	122	106	117	41.7		8.78
	Atrazine Desethyl	72.7	86.8	57.7	69.0	17.6		17.9
	Azinphos Methyl	105	126	99.7	118	18.0		16.7
	Bromacil	69.6	78.6	65.6	66.7	12.1		0.723
	Butylate	46.8	57.4	36.4	42.6	20.3		15.7
	Chlorpyrifos Ethyl	90.0	107	92.5	103	17.4		11.1
	Chlorpyrifos Methyl	86.4	103	87.4	100	17.3		13.8
	Cyanazine	97.0	109	83.7	90.3	11.3		7.56
	Demeton	77.3	93.0	75.2	87.9	18.4		15.5
	Diazinon	84.7	104	84.8	104	20.0		20.3
	Dimethenamid	86.9	103	87.9	99.0	17.2		11.9
	Disulfoton	90.2	109	96.6	101	19.1		3.91
	Dithiopyr	85.5	102	86.7	98.0	17.7		12.3
	EPTC	42.2	52.8	33.5	38.5	22.2		13.9
	Ethion	81.6	87.3	86.6	79.9	6.70		8.05
	Ethoprop	77.9	95.0	77.3	88.7	19.7		13.7
	Fenamiphos	72.2	78.6	66.1	76.0	8.47		14.0
	Fipronil	65.9	74.6	58.4	65.2	12.3		11.0
	Fipronil Desulfinyl	57.6	64.7	47.1	54.4	11.6		14.4
	Fipronil Sulfide	65.6	69.5	54.9	61.6	5.69		11.4
	Fipronil Sulfone	66.7	70.7	50.4	57.7	5.81		13.4
	Fonofos	80.1	99.8	81.1	91.0	21.9		11.4
	Hexazinone	87.8	113	92.6	99.9	24.8		7.63
	Malathion	90.6	107	95.1	104	16.9		9.24

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	83.3	98.8	82.8	93.1	17.0	11.8
	Metolachlor	85.1	103	86.7	100	18.7	13.7
	Metribuzin	161	189	157	192	16.0	19.7
	Mevinphos	66.4	80.8	65.5	76.8	19.5	15.9
	Molinate	62.3	75.3	58.5	67.2	18.8	13.9
	Norflurazon	68.3	76.8	55.5	63.6	11.7	13.6
	Oxadiazon	80.8	97.4	85.3	93.6	18.6	9.34
	Parathion Ethyl	80.0	95.1	86.9	94.9	17.3	8.87
	Parathion Methyl	92.9	117	98.4	110	23.1	11.5
	Pendimethalin	85.5	105	90.3	99.6	20.6	9.82
	Phorate	86.7	106	86.9	94.8	19.9	8.64
	Prodiamine	83.5	90.1	82.9	103	7.69	21.5
	Prometon	78.8	94.4	83.3	85.1	18.0	2.07
	Prometryn	82.0	91.6	78.8	86.7	11.0	9.55
	Simazine	91.0	114	102	110	22.5	4.97
	Tebuconazole	60.1	68.0	63.0	64.1	12.3	1.63
	Terbufos	83.7	102	87.3	98.7	19.8	12.2
	Terbuthylazine	85.3	107	86.8	100	22.6	14.1
EPA 8321B	2,4-D	78.2		104	104		0.0714
	Acesulfame K	118		86.1	86.3		0.222
	Acetaminophen	95.1		125	125		0.329
	AMPA	87.8		67.8	67.6		0.353
	Bentazon	115		90.8	105		9.96
	Carbamazepine	92.2		81.5	84.8		3.92
	Diuron	82.7		69.4	81.9		15.6
	Endothall	92.3		94.2	94.2		0.0242
	Fenuron	115		88.7	86.9		1.95
	Fluridone	102		113	122		6.46
	Glufosinate	105		77.8	71.7		8.12
	Glyphosate	100		83.1	77.8		5.80
	Hydrocodone	102		100	117		15.6
	Ibuprofen	88.5		86.0	73.8		15.3
	Imazapyr	102		130	149		8.26
	Imidacloprid	103		202	215		5.85
	Linuron	74.2		72.5	82.3		12.7
	MCPP	99.7		130	140		7.54
	Naproxen	75.6		87.2	87.2		0.0017
	Primidone	104		104	109		4.77
	Pyraclostrobin	69.0		72.1	69.5		3.61
	Sucralose	95.4		98.0	96.5		1.44
	Triclopyr	64.2		85.8	86.3		0.627
SM 2120 B	Color (true)	102				1.93	
SM 2320 B-97	Total Alkalinity	102				0.525	
SM 2540 C-97	TDS					7.54	
SM 4500 F-C-97	Fluoride	96.4		97.6	97.6		0.0
SM 5310 B-00	Organic Carbon	95.8		96.9	97.5		0.501

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2063092

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	2063123
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2063123
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2063092
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2063092
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2063093
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2063093
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2063093
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2063093
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2063094
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2063124
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2063116
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2063116
SM 2120 B / E31780	True Color measured at 450 nm	2063092
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2063092
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2063092
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2063092
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2063092
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2063093

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	02/15/2019			02/15/2019 16:26	Adrian Shelby	2063092
EPA 200.7 Rev. 4.4	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/19/2019 16:13	Betina Topolski	2063123
EPA 200.8 Rev. 5.4	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/25/2019 19:21	Allison Taylor	2063123
EPA 300.0 Rev. 2.1	02/15/2019			02/27/2019 00:54	Lipi Saha	2063092
EPA 350.1 Rev. 2.0	02/15/2019			02/21/2019 12:00	Ping Hua	2063093
EPA 351.2 Rev. 2.0	02/15/2019	02/20/2019 12:40	Jhamieka S. Greenwood	02/22/2019 10:24	Joseph Suarez	2063093
EPA 353.2 Rev. 2.0	02/15/2019			02/22/2019 11:08	Beverly Y. Sanders	2063093
EPA 365.1 Rev. 2.0	02/15/2019	02/19/2019 11:45	Sima Feizi	02/21/2019 18:26	Rosalyn Ballman	2063093
EPA 365.1 Rev. 2.0 dissolved	02/15/2019			02/15/2019 17:59	Jhamieka S. Greenwood	2063094
EPA 8270D	02/15/2019	02/18/2019 08:30	Dinesh Mishra	02/20/2019 18:59	Vandana T. Nagar	2063124
EPA 8321B	02/15/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 12:34	Mohammad Ghaffari	2063116
	02/15/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 20:11	Rebecca Ware	2063116
	02/15/2019	02/20/2019 11:00	Rebecca Ware	02/22/2019 20:01	Mohammad Ghaffari	2063116
	02/15/2019	02/21/2019 10:00	Hoor Shaik	02/24/2019 13:16	Juyoung Kim	2063116
SM 2120 B	02/15/2019			02/15/2019 16:40	Chelsea Hernandez	2063092
SM 2320 B-97	02/15/2019			02/21/2019 06:59	Dale L. Simmons	2063092
SM 2540 C-97	02/15/2019			02/20/2019 16:21	Yijie Li	2063092
SM 2540 D-97	02/15/2019			02/20/2019 16:21	Yijie Li	2063092
SM 4500 F-C-97	02/15/2019			02/21/2019 06:59	Dale L. Simmons	2063092
SM 5310 B-00	02/15/2019			02/24/2019 06:01	Julia Storbeck	2063093