

Chemical Analysis Report

NE-DIST-2016-11-16-01

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

Event Description: **Gainesville Lochloosa**

Request ID: **RQ-2016-11-14-17**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Date Certified: 13-DEC-2016 11:48



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: Nutrients and Pesticides.

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Lochloosa Slough at US 301

Collection Date/Time: 11/15/2016 09:45

Field ID: G1NE0209 11152016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1850627	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P315324	
	EPA 300.0 Rev. 2.1	Chloride	11	A	mg Cl/L	P316096	
		Sulfate	0.90	A	mg SO4/L	P316097	
	SM 2120 B	Color (true)	430		PCU	P315364	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P315673	
	SM 2540 C-97	TDS	222		mg/L	P315618	
	SM 2540 D-97	TSS	2	I	mg/L	P315629	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P315676	
1850629	EPA 350.1 Rev. 2.0	Ammonia-N	0.095		mg N/L	P315786	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P316068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P315841	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P315828	
	SM 5310 B-00	Organic Carbon	53		mg C/L	P315384	
1850631	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P315297	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lochloosa Slough at US 301

Collection Date/Time: 11/15/2016 09:45

Field ID: G1NE0209 11152016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1850648	EPA 8321B	Glyphosate**	10	U	ug/L	P315281	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P315573	
		Diuron	0.0040	UJ	ug/L	P315573	SUR
		2,4-DB	0.0020	U	ug/L	P315573	
		Fenuron	0.0080	UJ	ug/L	P315573	SUR
		2,4,5-T	0.0020	U	ug/L	P315573	
		Acifluorfen	0.0020	U	ug/L	P315573	
		Imidacloprid	0.0040	UJ	ug/L	P315573	SUR
		Bentazon	0.0020	U	ug/L	P315573	
		Linuron	0.0040	UJ	ug/L	P315573	SUR
		Dichlorprop	0.0020	U	ug/L	P315573	
		Dinoseb	0.020	U	ug/L	P315573	RPD
		MCPA	0.0040	U	ug/L	P315573	
		Acetaminophen**	0.0040	U	ug/L	P315573	
		MCPD	0.0040	U	ug/L	P315573	
		Picloram	0.050	U	ug/L	P315573	
		Carbamazepine**	4.0E-04	U	ug/L	P315573	
		Silvex	0.0020	U	ug/L	P315573	RPD
		Triclopyr**	0.0040	U	ug/L	P315573	
		Primidone**	0.0080	U	ug/L	P315573	
		Fluridone**	0.0020	J	ug/L	P315573	SUR
1850649	EPA 8270D	Dieldrin	0.39	U	ng/L	P315436	

Field ID: G1NE0209 11152016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1850650	EPA 8270D	Ametryn	0.33	U	ng/L	P315500	
		Atrazine	0.25	U	ng/L	P315500	
		Chlorpyrifos Ethyl	0.25	UJ	ng/L	P315500	SUR
		Chlorpyrifos Methyl	0.10	UJ	ng/L	P315500	SUR
		Disulfoton	0.33	UJ	ng/L	P315500	SUR
		Ethion	0.15	UJ	ng/L	P315500	SUR
		Ethoprop	0.10	UJ	ng/L	P315500	SUR
		Hexazinone	4.4		ng/L	P315500	
		Malathion	0.35	UJ	ng/L	P315500	SUR
		Metribuzin	0.20	U	ng/L	P315500	
		Mevinphos	0.51	UJ	ng/L	P315500	SUR
		Norflurazon	0.51	U	ng/L	P315500	
		Phorate	0.25	UJ	ng/L	P315500	SUR
		Prometryn	0.20	U	ng/L	P315500	
		Simazine	0.51	U	ng/L	P315500	
		Atrazine Desethyl	1.5	UJ	ng/L	P315500	RPD
		Prometon	0.91	U	ng/L	P315500	
		Fipronil	0.25	U	ng/L	P315500	
		Molinate	0.30	UJ	ng/L	P315500	RPD
		Pendimethalin	1.5	U	ng/L	P315500	
		Terbufos	0.10	UJ	ng/L	P315500	SUR
		EPTC	1.3	UJ	ng/L	P315500	LCS
		Terbuthylazine	0.43	U	ng/L	P315500	
		Bromacil	0.51	U	ng/L	P315500	
		Fipronil Sulfide	0.15	U	ng/L	P315500	
		Fipronil Sulfone	0.15	U	ng/L	P315500	
		Alachlor	0.25	U	ng/L	P315500	
		Azinphos Methyl	2.3	UJ	ng/L	P315500	SUR
		Butylate	0.40	UJ	ng/L	P315500	RPD
		Demeton	1.0	UJ	ng/L	P315500	SUR
		Diazinon	0.13	UJ	ng/L	P315500	SUR
		Fenamiphos	0.25	UJ	ng/L	P315500	SUR
		Fonofos	0.20	UJ	ng/L	P315500	SUR
		Metalaxyl	0.20	U	ng/L	P315500	
		Metolachlor	0.25	U	ng/L	P315500	
		Acetochlor	0.25	U	ng/L	P315500	
		Cyanazine	0.51	UJ	ng/L	P315500	CCV
		Parathion Ethyl	0.25	UJ	ng/L	P315500	SUR
		Parathion Methyl	0.25	UJ	ng/L	P315500	SUR

Ref. Method and Comment:

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes. The sample results were confirmed beyond holding time.

EPA 8270D: Reported result qualified with J due to surrogates below control limits; the sample was subsequently re-analyzed (after expiration) with acceptable surrogate recoveries and the same analytical results were obtained. Refer to the narrative for an explanation of QC Codes.

Sample Location: Lochloosa at Fish Camp Rd

Collection Date/Time: 11/15/2016 11:45

Field ID: G3NE0211152016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1850628	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P315324	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P315991	
		Sulfate	3.2		mg SO4/L	P315993	
	SM 2120 B	Color (true)	67		PCU	P315364	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P315673	
	SM 2540 C-97	TDS	149		mg/L	P315618	
	SM 2540 D-97	TSS	3	I	mg/L	P315629	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P315676	
1850630	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P315786	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P316094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P315841	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P315828	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P315384	
1850632	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P315297	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P315324

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P315991

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P315993

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P316096

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P316097

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316094

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315828

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315297

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

Reference Method: EPA 8270D
Batch ID: P315436

Component	Result	Code	Units
Dieldrin	0.40	U	ng/L

Reference Method: EPA 8270D
Batch ID: P315500

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.2	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D

Batch ID: P315500

Component	Result	Code	Units
Cyanazine	0.50	U	ng/L
Demeton	1.0	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.32	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil 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
Metaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B

Batch ID: P315281

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: SM 2120 B

Batch ID: P315364

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P315673

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

Reference Method: SM 2540 C-97

Batch ID: P315618

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P315618

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P315629

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P315384

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: USGS O-2060-01
Batch ID: P315573

Component	Result	Code	Units
2,4,5-T	0.0020	U	ug/L
2,4-D	0.0040	U	ug/L
2,4-DB	0.0020	U	ug/L
Acetaminophen	0.0040	U	ug/L
Acifluorfen	0.0020	U	ug/L
Bentazon	0.0020	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Dichlorprop	0.0020	U	ug/L
Dinoseb	0.020	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPA	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Picloram	0.050	U	ug/L
Primidone	0.0080	U	ug/L
Silvex	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315991

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316096

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316097

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: P315786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316094

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315828

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P315297

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

Reference Method: EPA 8270D
 Batch ID: P315436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dieldrin	118	106	P/P	77 - 123

Reference Method: EPA 8270D
 Batch ID: P315500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	101	100	P/P	80 - 119
Alachlor	99.8	103	P/P	80 - 120
Ametryn	124	109	P/P	60 - 135
Atrazine	99.1	94.6	P/P	72 - 121
Atrazine Desethyl	81.9	81.7	P/P	14 - 124
Azinphos Methyl	115	115	P/P	74 - 186
Bromacil	112	109	P/P	38 - 125
Butylate	39.0	36.2	P/P	34 - 88.0
Chlorpyrifos Ethyl	94.1	87.4	P/P	53 - 108
Chlorpyrifos Methyl	96.3	91.0	P/P	29 - 119
Cyanazine	181	194	P/P	30 - 240
Demeton	77.2	79.9	P/P	35 - 127
Diazinon	103	103	P/P	75 - 121
Disulfoton	96.3	106	P/P	40 - 141
EPTC	39.5	33.4	P/F	36 - 96.0
Ethion	88.1	84.2	P/P	64 - 127
Ethoprop	85.9	81.4	P/P	65 - 108
Fenamiphos	107	104	P/P	62 - 140
Fipronil	102	106	P/P	59 - 127
Fipronil Sulfide	87.2	85.9	P/P	55 - 126
Fipronil Sulfone	92.6	85.2	P/P	56 - 127
Fonofos	95.7	88.2	P/P	64 - 111
Hexazinone	97.4	96.3	P/P	43 - 153
Malathion	97.6	91.2	P/P	70 - 129
Metaxyl	93.2	92.3	P/P	49 - 135
Metolachlor	98.4	99.8	P/P	81 - 120
Metribuzin	113	104	P/P	66 - 133
Mevinphos	78.8	69.1	P/P	33 - 128
Molinate	50.4	46.5	P/P	46 - 101
Norflurazon	98.9	102	P/P	62 - 131
Parathion Ethyl	92.7	95.1	P/P	80 - 109
Parathion Methyl	102	96.9	P/P	76 - 126
Pendimethalin	85.6	83.3	P/P	47 - 137
Phorate	91.9	86.0	P/P	51 - 115
Prometon	106	108	P/P	67 - 123
Prometryn	108	107	P/P	66 - 122
Simazine	105	112	P/P	60 - 134
Terbufos	91.5	85.9	P/P	56 - 116
Terbutylazine	92.1	92.0	P/P	77 - 114

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P315281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	113		P	40 - 140

Reference Method: SM 2320 B-97
 Batch ID: P315673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P315676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P315384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P315573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	82.4		P	40 - 140
2,4-D	86.0		P	40 - 140
2,4-DB	71.6		P	40 - 140
Acetaminophen	131		P	40 - 140
Acifluorfen	46.4		P	40 - 140
Bentazon	86.8		P	40 - 140
Carbamazepine	122		P	40 - 140
Dichlorprop	80.0		P	40 - 140
Dinoseb	78.4		P	40 - 140
Diuron	87.2		P	40 - 140
Fenuron	104		P	40 - 140
Fluridone	87.6		P	40 - 140
Imidacloprid	98.0		P	40 - 160
Linuron	96.0		P	40 - 140
MCPA	88.0		P	40 - 140
MCPP	86.4		P	40 - 140
Picloram	89.6		P	40 - 140
Primidone	107		P	40 - 140
Silvex	71.6		P	40 - 140
Triclopyr	82.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1848613	Chloride	102		P	90 - 110
1848614	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1848613	Sulfate	97.5		P	90 - 110
1848614	Sulfate	93.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850627	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850627	Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850629	Ammonia-N	97.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850752	Kjeldahl Nitrogen	110	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851292	Kjeldahl Nitrogen	98.1	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850630	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850619	O-Phosphate-P	98.1	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P315436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851349	Dieldrin	120	107	P/P	76 - 128
1851380	Dieldrin	111		P	76 - 128

Reference Method: EPA 8270D
Batch ID: P315500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850650	Acetochlor	92.1	91.5	P/P	77 - 125
1850650	Alachlor	92.6	98.0	P/P	75 - 127
1850650	Ametryn	103	102	P/P	53 - 150
1850650	Atrazine	95.5	95.8	P/P	70 - 126
1850650	Atrazine Desethyl	101	56.7	P/P	8.0 - 105
1850650	Azinphos Methyl	102	94.4	P/P	63 - 204
1850650	Bromacil	102	99.5	P/P	43 - 132
1850650	Butylate	11.9	19.2	P/P	7.0 - 87.0
1850650	Chlorpyrifos Ethyl	72.3	74.0	P/P	53 - 111
1850650	Chlorpyrifos Methyl	79.5	79.3	P/P	38 - 117
1850650	Cyanazine	158	130	P/P	18 - 222
1850650	Demeton	67.7	76.5	P/P	10 - 157
1850650	Diazinon	104	98.5	P/P	73 - 127
1850650	Disulfoton	89.9	100	P/P	43 - 141
1850650	EPTC	13.8	17.4	P/P	11 - 86.0
1850650	Ethion	76.8	77.6	P/P	68 - 130
1850650	Ethoprop	83.8	87.0	P/P	60 - 108
1850650	Fenamiphos	62.6	71.1	P/P	56 - 139
1850650	Fipronil	92.8	79.5	P/P	29 - 143
1850650	Fipronil Sulfide	67.9	59.5	P/P	35 - 129
1850650	Fipronil Sulfone	62.8	54.2	P/P	16 - 146
1850650	Fonofos	85.4	81.8	P/P	59 - 112
1850650	Hexazinone	95.5	81.2	P/P	68 - 145
1850650	Malathion	76.5	74.4	P/P	69 - 131
1850650	Metalaxyl	93.4	84.3	P/P	67 - 119
1850650	Metolachlor	93.8	91.8	P/P	77 - 124
1850650	Metribuzin	112	106	P/P	63 - 134
1850650	Mevinphos	73.6	73.8	P/P	40 - 127
1850650	Molinate	31.3	44.9	P/P	27 - 98.0
1850650	Norflurazon	85.4	71.8	P/P	39 - 141
1850650	Parathion Ethyl	84.9	81.8	P/P	74 - 113
1850650	Parathion Methyl	97.7	90.9	P/P	61 - 133
1850650	Pendimethalin	81.6	80.5	P/P	26 - 179
1850650	Phorate	75.8	78.0	P/P	44 - 126
1850650	Prometon	115	93.2	P/P	43 - 147
1850650	Prometryn	113	107	P/P	68 - 126
1850650	Simazine	108	102	P/P	47 - 156
1850650	Terbufos	85.7	84.5	P/P	53 - 125
1850650	Terbutylazine	91.0	77.8	P/P	76 - 113

Reference Method: EPA 8321B
Batch ID: P315281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851129	Glyphosate	45.2	43.2	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851136	Fluoride	100	101	P/P	91 - 105

Reference Method: USGS O-2060-01
Batch ID: P315573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851360	2,4,5-T	72.0	86.0	P/P	40 - 140
1851360	2,4-D	84.0	106	P/P	40 - 140
1851360	2,4-DB	53.2	62.4	P/P	40 - 140
1851360	Acetaminophen	52.4	66.4	P/P	40 - 140
1851360	Acifluorfen	58.8	66.4	P/P	40 - 140
1851360	Bentazon	98.0	118	P/P	40 - 140
1851360	Carbamazepine	59.2	62.4	P/P	40 - 140
1851360	Dichlorprop	71.2	86.8	P/P	40 - 140
1851360	Dinoseb	63.6	118	P/P	40 - 140
1851360	Diuron	44.8	40.4	P/P	40 - 140
1851360	Fenuron	52.8	56.8	P/P	40 - 140
1851360	Fluridone	67.6	65.6	P/P	40 - 140
1851360	Imidacloprid	106	110	P/P	40 - 160
1851360	Linuron	75.6	69.6	P/P	40 - 140
1851360	MCPA	77.6	95.2	P/P	40 - 140
1851360	MCPP	79.6	100	P/P	40 - 140
1851360	Picloram	76.0	80.8	P/P	40 - 140
1851360	Primidone	70.8	71.6	P/P	40 - 140
1851360	Silvex	85.2	121	P/P	40 - 140
1851360	Triclopyr	63.6	68.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P315324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850543	Turbidity	7.12	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1848613	Chloride	0.0503	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850627	Chloride	0.155	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850627	Sulfate	3.35	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850629	Ammonia-N	2.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850752	Kjeldahl Nitrogen	0.0783	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851292	Kjeldahl Nitrogen	3.91	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850630	NO2NO3-N	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850615	Total-P	0.280	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850619	O-Phosphate-P	1.17	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P315436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851349	Dieldrin	8.43	Spike	P	0 - 30
LFB	Dieldrin	11.1	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P315500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850650	Acetochlor	0.644	Spike	P	0 - 30
1850650	Alachlor	5.65	Spike	P	0 - 30
1850650	Ametryn	1.01	Spike	P	0 - 30
1850650	Atrazine	0.280	Spike	P	0 - 30
1850650	Atrazine Desethyl	55.9	Spike	F	0 - 30
1850650	Azinphos Methyl	7.64	Spike	P	0 - 30
1850650	Bromacil	2.04	Spike	P	0 - 30
1850650	Butylate	47.0	Spike	F	0 - 30
1850650	Chlorpyrifos Ethyl	2.30	Spike	P	0 - 30
1850650	Chlorpyrifos Methyl	0.276	Spike	P	0 - 30
1850650	Cyanazine	19.6	Spike	P	0 - 30
1850650	Demeton	12.2	Spike	P	0 - 30
1850650	Diazinon	5.57	Spike	P	0 - 30
1850650	Disulfoton	10.7	Spike	P	0 - 30
1850650	EPTC	23.1	Spike	P	0 - 30
1850650	Ethion	0.994	Spike	P	0 - 30
1850650	Ethoprop	3.68	Spike	P	0 - 30
1850650	Fenamiphos	12.6	Spike	P	0 - 30
1850650	Fipronil	15.4	Spike	P	0 - 30
1850650	Fipronil Sulfide	13.1	Spike	P	0 - 30
1850650	Fipronil Sulfone	14.6	Spike	P	0 - 30
1850650	Fonofos	4.31	Spike	P	0 - 30
1850650	Hexazinone	11.5	Spike	P	0 - 30
1850650	Malathion	2.75	Spike	P	0 - 30
1850650	Metaxyl	10.2	Spike	P	0 - 30
1850650	Metolachlor	2.11	Spike	P	0 - 30
1850650	Metribuzin	5.13	Spike	P	0 - 30
1850650	Mevinphos	0.248	Spike	P	0 - 30
1850650	Molinate	35.8	Spike	F	0 - 30
1850650	Norflurazon	17.3	Spike	P	0 - 30
1850650	Parathion Ethyl	3.79	Spike	P	0 - 30
1850650	Parathion Methyl	7.18	Spike	P	0 - 30
1850650	Pendimethalin	1.35	Spike	P	0 - 30
1850650	Phorate	2.79	Spike	P	0 - 30
1850650	Prometon	20.9	Spike	P	0 - 30
1850650	Prometryn	5.57	Spike	P	0 - 30
1850650	Simazine	5.33	Spike	P	0 - 30
1850650	Terbufos	1.41	Spike	P	0 - 30
1850650	Terbuthylazine	15.7	Spike	P	0 - 30
LFB	Acetochlor	0.921	LCS	P	0 - 30
LFB	Alachlor	2.72	LCS	P	0 - 30
LFB	Ametryn	12.7	LCS	P	0 - 30
LFB	Atrazine	4.65	LCS	P	0 - 30
LFB	Atrazine Desethyl	0.210	LCS	P	0 - 30
LFB	Azinphos Methyl	0.316	LCS	P	0 - 30
LFB	Bromacil	2.57	LCS	P	0 - 30
LFB	Butylate	7.63	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	7.34	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	5.74	LCS	P	0 - 30
LFB	Cyanazine	6.74	LCS	P	0 - 30
LFB	Demeton	3.43	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P315500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Diazinon	0.541	LCS	P	0 - 30
LFB	Disulfoton	9.91	LCS	P	0 - 30
LFB	EPTC	16.7	LCS	P	0 - 30
LFB	Ethion	4.63	LCS	P	0 - 30
LFB	Ethoprop	5.32	LCS	P	0 - 30
LFB	Fenamiphos	2.84	LCS	P	0 - 30
LFB	Fipronil	4.06	LCS	P	0 - 30
LFB	Fipronil Sulfide	1.50	LCS	P	0 - 30
LFB	Fipronil Sulfone	8.34	LCS	P	0 - 30
LFB	Fonofos	8.17	LCS	P	0 - 30
LFB	Hexazinone	1.14	LCS	P	0 - 30
LFB	Malathion	6.80	LCS	P	0 - 30
LFB	Metalaxyl	0.917	LCS	P	0 - 30
LFB	Metolachlor	1.44	LCS	P	0 - 30
LFB	Metribuzin	8.71	LCS	P	0 - 30
LFB	Mevinphos	13.1	LCS	P	0 - 30
LFB	Molinate	8.09	LCS	P	0 - 30
LFB	Norflurazon	2.73	LCS	P	0 - 30
LFB	Parathion Ethyl	2.59	LCS	P	0 - 30
LFB	Parathion Methyl	4.65	LCS	P	0 - 30
LFB	Pendimethalin	2.79	LCS	P	0 - 30
LFB	Phorate	6.60	LCS	P	0 - 30
LFB	Prometon	1.25	LCS	P	0 - 30
LFB	Prometryn	0.789	LCS	P	0 - 30
LFB	Simazine	6.51	LCS	P	0 - 30
LFB	Terbufos	6.26	LCS	P	0 - 30
LFB	Terbutylazine	0.125	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P315281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851129	Glyphosate	4.52	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P315364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850614	Color (true)	2.45	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P315673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851136	Total Alkalinity	0.452	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P315618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850501	TDS	1.89	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P315676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851136	Fluoride	0.494	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P315384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850629	Organic Carbon	0.272	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P315573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851360	2,4,5-T	17.7	Spike	P	0 - 30
1851360	2,4-D	20.7	Spike	P	0 - 30
1851360	2,4-DB	15.9	Spike	P	0 - 30
1851360	Acetaminophen	23.6	Spike	P	0 - 30
1851360	Acifluorfen	12.1	Spike	P	0 - 30
1851360	Bentazon	15.7	Spike	P	0 - 30
1851360	Carbamazepine	5.26	Spike	P	0 - 30
1851360	Dichlorprop	19.7	Spike	P	0 - 30
1851360	Dinoseb	59.9	Spike	F	0 - 30
1851360	Diuron	10.3	Spike	P	0 - 30
1851360	Fenuron	7.30	Spike	P	0 - 30
1851360	Fluridone	2.87	Spike	P	0 - 30
1851360	Imidacloprid	3.33	Spike	P	0 - 30
1851360	Linuron	8.26	Spike	P	0 - 30
1851360	MCPA	20.4	Spike	P	0 - 30
1851360	MCPP	22.7	Spike	P	0 - 30
1851360	Picloram	6.12	Spike	P	0 - 30
1851360	Primidone	1.12	Spike	P	0 - 30
1851360	Silvex	34.6	Spike	F	0 - 30
1851360	Triclopyr	5.53	Spike	P	0 - 30

* 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

Quality Assurance Report Surrogates

Lab Sample ID: 1850648
Field Sample ID: G1NE0209 11152016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	125	P	50 - 150
USGS O-2060-01	2,4-D-d3	44.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	47.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	43.0	P	40 - 160
USGS O-2060-01	Diuron-d6	25.0	F	40 - 150
USGS O-2060-01	Primidone-d5	41.6	P	40 - 150

Lab Sample ID: 1850649
Field Sample ID: G1NE0209 11152016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	58.4	P	56 - 133
EPA 8270D	Tetrachloro-m-xylene	55.3	P	47 - 94.0

Lab Sample ID: 1850650
Field Sample ID: G1NE0209 11152016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	55.9	F	65 - 132
EPA 8270D	Simazine-d10	97.0	P	72 - 128

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72846
Included Lab Sample IDs: 1850631, 1850632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.7	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72856
Included Lab Sample IDs: 1850627, 1850628

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A72861
Included Lab Sample IDs: 1850627, 1850628

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115
Color (true)	104	102	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A72867

Included Lab Sample IDs: 1850629, 1850630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A72916

Included Lab Sample IDs: 1850648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	107	130	P/P	70 - 160

Reference Method: SM 2320 B-97

Run ID: A72982

Included Lab Sample IDs: 1850627, 1850628

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

Reference Method: SM 4500 F-C-97

Run ID: A72982

Included Lab Sample IDs: 1850627, 1850628

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

Reference Method: USGS O-2060-01

Run ID: A73013

Included Lab Sample IDs: 1850648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	83.8	89.2	P/P	50 - 150
2,4-D	93.0	108	P/P	50 - 150
2,4-DB	82.4	101	P/P	50 - 150
Acifluorfen	87.2	96.6	P/P	50 - 150
Bentazon	83.6	79.2	P/P	50 - 150
Dichlorprop	89.0	93.4	P/P	50 - 150
Dinoseb	92.0	86.2	P/P	50 - 150
MCPA	103	104	P/P	50 - 150
MCPP	93.0	95.0	P/P	50 - 150
Picloram	97.0	92.8	P/P	50 - 150
Silvex	88.8	99.6	P/P	50 - 150
Triclopyr	96.4	94.0	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A73014

Included Lab Sample IDs: 1850648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	85.6	116	P/P	60 - 150
Carbamazepine	100	126	P/P	60 - 150
Diuron	110	118	P/P	60 - 150
Fenuron	106	118	P/P	60 - 150
Fluridone	103	108	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A73014

Included Lab Sample IDs: 1850648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	86.4	98.0	P/P	60 - 150
Linuron	113	106	P/P	60 - 150
Primidone	97.2	117	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73030

Included Lab Sample IDs: 1850629, 1850630

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

Reference Method: EPA 8270D

Run ID: A73032

Included Lab Sample IDs: 1850649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dieldrin	104		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73050

Included Lab Sample IDs: 1850629, 1850630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73064

Included Lab Sample IDs: 1850627

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.9	P/P	90 - 110
Sulfate	97.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73071

Included Lab Sample IDs: 1850629, 1850630

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73105

Included Lab Sample IDs: 1850628

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	99.0	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73162

Included Lab Sample IDs: 1850630

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73173

Included Lab Sample IDs: 1850629

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

Reference Method: EPA 8270D

Run ID: A73204

Included Lab Sample IDs: 1850650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	99.2		P	80 - 120
Alachlor	101		P	80 - 120
Ametryn	109		P	80 - 120
Atrazine	104		P	80 - 120
Atrazine Desethyl	86.9		P	80 - 120
Azinphos Methyl	91.7		P	80 - 120
Bromacil	102		P	80 - 120
Butylate	95.7		P	80 - 120
Chlorpyrifos Ethyl	98.0		P	80 - 120
Chlorpyrifos Methyl	98.0		P	80 - 120
Cyanazine	71.8*		F	80 - 120
Demeton	91.8		P	80 - 120
Diazinon	102		P	80 - 120
Disulfoton	103		P	80 - 120
EPTC	101		P	80 - 120
Ethion	94.3		P	80 - 120
Ethoprop	98.4		P	80 - 120
Fenamiphos	95.7		P	80 - 120
Fipronil	98.3		P	80 - 120
Fipronil Sulfide	97.6		P	80 - 120
Fipronil Sulfone	97.6		P	80 - 120
Fonofos	94.3		P	80 - 120
Hexazinone	98.4		P	80 - 120
Malathion	95.4		P	80 - 120
Metalaxyl	99.8		P	80 - 120
Metolachlor	103		P	80 - 120
Metribuzin	82.4		P	80 - 120
Mevinphos	97.8		P	80 - 120
Molinate	99.1		P	80 - 120
Norflurazon	98.9		P	80 - 120
Parathion Ethyl	102		P	80 - 120
Parathion Methyl	94.5		P	80 - 120
Pendimethalin	95.7		P	80 - 120
Phorate	95.3		P	80 - 120
Prometon	103		P	80 - 120
Prometryn	101		P	80 - 120
Simazine	104		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A73204
Included Lab Sample IDs: 1850650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Terbufos	93.6		P	80 - 120
Terbutylazine	101		P	80 - 120

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						7.12	
EPA 300.0 Rev. 2.1	Chloride	101		102	100		0.0503	
	Chloride	101		98.2			0.155	
	Sulfate	95.9		97.5	93.6			
	Sulfate	97.1		95.1			3.35	
EPA 350.1 Rev. 2.0	Ammonia-N	103		97.6	104			2.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		110	110			0.0783
	Kjeldahl Nitrogen	100		98.1	102			3.91
EPA 353.2 Rev. 2.0	NO2NO3-N	103		103	104			1.41
EPA 365.1 Rev. 2.0	Total-P	102						0.280
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		98.1	99.6			1.17
EPA 8270D	Acetochlor	101	100	92.1	91.5	0.921		0.644
	Alachlor	99.8	103	92.6	98.0	2.72		5.65
	Ametryn	124	109	103	102	12.7		1.01
	Atrazine	99.1	94.6	95.5	95.8	4.65		0.280
	Atrazine Desethyl	81.9	81.7	101	56.7	0.210		55.9
	Azinphos Methyl	115	115	102	94.4	0.316		7.64
	Bromacil	112	109	102	99.5	2.57		2.04
	Butylate	39.0	36.2	11.9	19.2	7.63		47.0
	Chlorpyrifos Ethyl	94.1	87.4	72.3	74.0	7.34		2.30
	Chlorpyrifos Methyl	96.3	91.0	79.5	79.3	5.74		0.276
	Cyanazine	181	194	158	130	6.74		19.6
	Demeton	77.2	79.9	67.7	76.5	3.43		12.2
	Diazinon	103	103	104	98.5	0.541		5.57
	Dieldrin	106	118	111	120	107 11.1		8.43
	Disulfoton	96.3	106	89.9	100	9.91		10.7
	EPTC	39.5	33.4	13.8	17.4	16.7		23.1
	Ethion	88.1	84.2	76.8	77.6	4.63		0.994
	Ethoprop	85.9	81.4	83.8	87.0	5.32		3.68
	Fenamiphos	107	104	62.6	71.1	2.84		12.6
	Fipronil	102	106	92.8	79.5	4.06		15.4
	Fipronil Sulfide	87.2	85.9	67.9	59.5	1.50		13.1
	Fipronil Sulfone	92.6	85.2	62.8	54.2	8.34		14.6
	Fonofos	95.7	88.2	85.4	81.8	8.17		4.31
	Hexazinone	97.4	96.3	95.5	81.2	1.14		11.5
	Malathion	97.6	91.2	76.5	74.4	6.80		2.75
	Metalaxyl	93.2	92.3	93.4	84.3	0.917		10.2
	Metolachlor	98.4	99.8	93.8	91.8	1.44		2.11

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8270D	Metribuzin	113	104	112	106	8.71	5.13
	Mevinphos	78.8	69.1	73.6	73.8	13.1	0.248
	Molinate	50.4	46.5	31.3	44.9	8.09	35.8
	Norflurazon	98.9	102	85.4	71.8	2.73	17.3
	Parathion Ethyl	92.7	95.1	84.9	81.8	2.59	3.79
	Parathion Methyl	102	96.9	97.7	90.9	4.65	7.18
	Pendimethalin	85.6	83.3	81.6	80.5	2.79	1.35
	Phorate	91.9	86.0	75.8	78.0	6.60	2.79
	Prometon	106	108	115	93.2	1.25	20.9
	Prometryn	108	107	113	107	0.789	5.57
	Simazine	105	112	108	102	6.51	5.33
	Terbufos	91.5	85.9	85.7	84.5	6.26	1.41
	Terbutylazine	92.1	92.0	91.0	77.8	0.125	15.7
	Glyphosate	113		45.2	43.2		4.52
EPA 8321B	Color (true)					2.45	
SM 2120 B	Total Alkalinity	102				0.452	
SM 2320 B-97	TDS					1.89	
SM 2540 C-97	Fluoride	97.3		100	101		0.494
SM 4500 F-C-97	Organic Carbon	101					0.272
SM 5310 B-00	2,4,5-T	82.4		72.0	86.0		17.7
USGS O-2060-01	2,4-D	86.0		84.0	106		20.7
	2,4-DB	71.6		53.2	62.4		15.9
	Acetaminophen	131		52.4	66.4		23.6
	Acifluorfen	46.4		58.8	66.4		12.1
	Bentazon	86.8		98.0	118		15.7
	Carbamazepine	122		59.2	62.4		5.26
	Dichlorprop	80.0		71.2	86.8		19.7
	Dinoseb	78.4		63.6	118		59.9
	Diuron	87.2		44.8	40.4		10.3
	Fenuron	104		52.8	56.8		7.30
	Fluridone	87.6		67.6	65.6		2.87
	Imidacloprid	98.0		106	110		3.33
	Linuron	96.0		75.6	69.6		8.26
	MCPA	88.0		77.6	95.2		20.4
	MCPP	86.4		79.6	100		22.7
	Picloram	89.6		76.0	80.8		6.12
	Primidone	107		70.8	71.6		1.12
	Silvex	71.6		85.2	121		34.6
	Triclopyr	82.8		63.6	68.4		5.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1850627, 1850628
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1850627, 1850628
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1850627, 1850628
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1850629, 1850630
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1850629, 1850630

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1850629, 1850630
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1850629, 1850630
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1850631, 1850632
EPA 8270D / E31780	Organochlorine pesticides (ultra low level) in water matrices by GC/MS/MS	1850649
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1850650
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1850648
SM 2120 B / E31780	True Color measured at 450 nm	1850627, 1850628
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1850627, 1850628
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1850627, 1850628
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1850627, 1850628
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1850627, 1850628
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1850629, 1850630
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1850648
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1850648

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	11/16/2016			11/16/2016 16:20	Sima Feizi	1850627, 1850628
EPA 300.0 Rev. 2.1	11/16/2016			11/30/2016	Ping Hua	1850627
	11/16/2016			12/01/2016	Ping Hua	1850628
EPA 350.1 Rev. 2.0	11/16/2016			11/28/2016	Sofia Elnemr	1850629, 1850630
EPA 351.2 Rev. 2.0	11/16/2016	12/02/2016	Adrian Shelby	12/05/2016	Joseph Suarez	1850629, 1850630
EPA 353.2 Rev. 2.0	11/16/2016			11/29/2016	Beverly Y. Sanders	1850629, 1850630
EPA 365.1 Rev. 2.0	11/16/2016	11/29/2016	Christopher Armour	11/29/2016	Lipi Saha	1850629, 1850630
EPA 365.1 Rev. 2.0 dissolved	11/16/2016			11/16/2016 15:54	Julia Storbeck	1850632
	11/16/2016			11/16/2016 16:16	Julia Storbeck	1850631
EPA 8270D	11/16/2016	11/18/2016	Fe-Val Siddell	11/28/2016	Irina Carbone	1850649
	11/16/2016	11/21/2016	John Kaba	11/29/2016	Irina Carbone	1850650
EPA 8321B	11/16/2016	11/21/2016	Mohammad Ghaffari	11/21/2016	Mohammad Ghaffari	1850648
SM 2120 B	11/16/2016			11/16/2016 17:01	Blanca Fach	1850628
	11/16/2016			11/16/2016 17:27	Blanca Fach	1850627
SM 2320 B-97	11/16/2016			11/23/2016	Dale L. Simmons	1850627, 1850628
SM 2540 C-97	11/16/2016			11/18/2016	Yijie Li	1850627, 1850628
SM 2540 D-97	11/16/2016			11/18/2016	Yijie Li	1850627, 1850628
SM 4500 F-C-97	11/16/2016			11/23/2016	Dale L. Simmons	1850627, 1850628
SM 5310 B-00	11/16/2016			11/17/2016	Julie Michelle Frank	1850629, 1850630
USGS O-2060-01	11/16/2016	11/22/2016	Hoor Shaik	11/22/2016	Juyoung Kim	1850648
	11/16/2016	11/22/2016	Hoor Shaik	11/23/2016	Juyoung Kim	1850648