

Chemical Analysis Report

NE-DIST-2019-02-20-02

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

Event Description: **SCI Daughtery and Ryal Swamp**

Request ID: **RQ-2019-02-18-11**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Colin Wright, Program Administrator

Date Certified: 07-MAR-2019 13:54

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: DAUGHTERY BR @ CREWS RD

Collection Date/Time: 02/19/2019 10:00

Field ID: 19010136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063907	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P359257	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P359817	
		Sulfate	1.3		mg SO4/L	P359819	
	SM 2120 B	Color (true)	180		PCU	P359247	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P359598	
	SM 2540 C-97	TDS	92		mg/L	P359700	
	SM 2540 D-97	TSS	7	I	mg/L	P359468	
	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P359602	
2063908	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P359549	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P359693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.1		mg N/L	P359518	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P359388	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P359591	
2063909	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P359281	
2063913	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**	0.042		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	
		Fluridone**	8.0E-04	U	ug/L	P359132	
		Imazapyr**	0.032		ug/L	P359132	
		Hydrocodone**	0.0020	U	ug/L	P359132	
		Ibuprofen**	0.020	U	ug/L	P359132	
		Imidacloprid	0.0020	U	ug/L	P359132	MS
		Linuron	0.0040	U	ug/L	P359132	
		MCPP	0.0020	U	ug/L	P359132	
		Naproxen**	0.0080	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	
2063916	EPA 200.7 Rev. 4.4	Calcium	6.64		mg/L	P359691	
		Iron	810		ug/L	P359691	
		Magnesium	3.58		mg/L	P359691	
		Potassium	0.73	I	mg/L	P359691	
		Sodium	8.0		mg/L	P359691	
	EPA 200.8 Rev. 5.4	Aluminum	390		ug/L	P359328	

Field ID: 19010136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063916	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P359328	
		Arsenic	0.45		ug/L	P359328	
		Barium	50.0		ug/L	P359328	
		Boron**	14.5		ug/L	P359328	
		Cadmium	0.050	I	ug/L	P359328	
		Chromium	0.80	I	ug/L	P359328	
		Copper	0.47	I	ug/L	P359328	
		Lead	0.63		ug/L	P359328	
		Nickel	1.1	I	ug/L	P359328	
		Selenium	0.27	I	ug/L	P359328	
		Silver	0.010	U	ug/L	P359328	
		Thallium	0.10	U	ug/L	P359328	
		Zinc	7.1	I	ug/L	P359328	
2063918	EPA 8270D	Acetochlor	0.24	U	ng/L	P359412	
		Alachlor	0.24	U	ng/L	P359412	
		Ametryn	0.57	U	ng/L	P359412	
		Atrazine	0.24	U	ng/L	P359412	
		Atrazine Desethyl	1.4	U	ng/L	P359412	
		Azinphos Methyl	2.2	U	ng/L	P359412	
		Bromacil	0.74	I	ng/L	P359412	
		Butylate	0.38	U	ng/L	P359412	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P359412	
		Chlorpyrifos Methyl	0.096	U	ng/L	P359412	
		Cyanazine	3.1	U	ng/L	P359412	
		Demeton	6.7	U	ng/L	P359412	
		Diazinon	0.12	U	ng/L	P359412	
		Dimethenamid**	0.096	U	ng/L	P359412	
		Disulfoton	0.48	U	ng/L	P359412	
		Dithiopyr**	0.096	U	ng/L	P359412	
		EPTC	1.2	U	ng/L	P359412	
		Ethion	0.14	U	ng/L	P359412	
		Ethoprop	0.096	U	ng/L	P359412	
		Fenamiphos	0.48	U	ng/L	P359412	
		Fipronil	0.24	U	ng/L	P359412	
		Fipronil Desulfinyl**	0.12	UJ	ng/L	P359412	LCS
		Fipronil Sulfide	0.14	U	ng/L	P359412	
		Fipronil Sulfone	0.14	U	ng/L	P359412	
		Fonofos	0.19	U	ng/L	P359412	
		Hexazinone	0.48	U	ng/L	P359412	
		Malathion	0.47	I	ng/L	P359412	
		Metalaxyl	0.29	U	ng/L	P359412	
		Metolachlor	0.48	U	ng/L	P359412	
		Metribuzin	0.72	U	ng/L	P359412	
		Mevinphos	0.48	U	ng/L	P359412	
		Molinate	0.29	U	ng/L	P359412	

Field ID: 19010136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063918	EPA 8270D	Norflurazon	0.48	U	ng/L	P359412	
		Oxadiazon**	0.096	U	ng/L	P359412	
		Parathion Ethyl	0.24	U	ng/L	P359412	
		Parathion Methyl	0.53	U	ng/L	P359412	
		Pendimethalin	0.96	U	ng/L	P359412	
		Phorate	0.24	U	ng/L	P359412	
		Prodiamine**	0.17	U	ng/L	P359412	
		Prometon	0.86	U	ng/L	P359412	
		Prometryn	0.19	U	ng/L	P359412	
		Simazine	6.1		ng/L	P359412	
		Tebuconazole**	0.48	U	ng/L	P359412	
		Terbufos	0.096	U	ng/L	P359412	
		Terbutylazine	0.41	U	ng/L	P359412	

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: P359257

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Component	Result	Code	Units
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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Zinc	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359819

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359549

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

Quality Assurance Report Method Blank Results

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

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359518

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359388

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

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

Reference Method: EPA 8270D
Batch ID: P359412

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: P359412

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
MCP	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: P359247

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359598

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

Reference Method: SM 2540 C-97
Batch ID: P359700

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359468

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359602

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359591

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: P359691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	103		P	80 - 120
Arsenic	108		P	80 - 120
Barium	106		P	80 - 120
Boron	110		P	80 - 120
Cadmium	108		P	80 - 120
Chromium	109		P	80 - 120
Copper	110		P	80 - 120
Lead	107		P	80 - 120
Nickel	108		P	80 - 120
Selenium	103		P	80 - 120
Silver	104		P	80 - 120
Thallium	108		P	80 - 120
Zinc	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

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

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359518

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359388

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

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

Reference Method: EPA 8270D
Batch ID: P359412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	90.6	100	P/P	71 - 121
Alachlor	89.4	98.0	P/P	72 - 119
Ametryn	86.7	101	P/P	47 - 144
Atrazine	88.1	91.4	P/P	75 - 123
Atrazine Desethyl	77.8	78.0	P/P	45 - 133
Azinphos Methyl	109	115	P/P	66 - 165
Bromacil	71.3	79.9	P/P	43 - 123
Butylate	52.2	59.7	P/P	27 - 83.0
Chlorpyrifos Ethyl	91.8	103	P/P	70 - 117
Chlorpyrifos Methyl	88.6	98.2	P/P	71 - 120
Cyanazine	93.1	96.6	P/P	34 - 264
Demeton	81.5	91.7	P/P	41 - 122
Diazinon	87.5	97.2	P/P	70 - 127
Dimethenamid	90.2	99.6	P/P	60 - 130
Disulfoton	84.3	104	P/P	56 - 127
Dithiopyr	87.0	98.2	P/P	60 - 130
EPTC	51.0	60.2	P/P	24 - 84.0
Ethion	81.9	92.7	P/P	53 - 132
Ethoprop	84.8	95.0	P/P	57 - 117
Fenamiphos	75.0	82.2	P/P	55 - 136
Fipronil	71.4	74.5	P/P	64 - 126
Fipronil Desulfinyl	59.3	63.6	F/P	60 - 130
Fipronil Sulfide	59.7	65.5	P/P	57 - 120
Fipronil Sulfone	66.0	74.0	P/P	52 - 115
Fonofos	82.1	95.2	P/P	61 - 121
Hexazinone	90.0	99.9	P/P	62 - 131
Malathion	91.6	103	P/P	67 - 126
Metalaxyl	86.6	95.3	P/P	54 - 128
Metolachlor	89.2	98.7	P/P	71 - 118
Metribuzin	151	163	P/P	42 - 221
Mevinphos	75.7	86.2	P/P	45 - 114
Molinate	67.6	76.3	P/P	33 - 91.0
Norflurazon	79.4	84.2	P/P	60 - 123
Oxadiazon	78.2	89.1	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P359412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	83.6	90.9	P/P	73 - 111
Parathion Methyl	96.6	110	P/P	74 - 126
Pendimethalin	80.9	94.6	P/P	63 - 131
Phorate	94.5	107	P/P	54 - 115
Prodiamine	77.0	86.6	P/P	60 - 130
Prometon	76.7	81.4	P/P	61 - 120
Prometryn	77.4	86.7	P/P	62 - 126
Simazine	106	120	P/P	75 - 126
Tebuconazole	66.5	70.0	P/P	30 - 100
Terbufos	84.8	98.1	P/P	65 - 116
Terbuthylazine	85.9	98.4	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: P359247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P359598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	106		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359602

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

Reference Method: SM 5310 B-00
Batch ID: P359591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063940	Calcium	103	105	P/P	80 - 120
2063940	Iron	103	104	P/P	80 - 120
2063940	Magnesium	103	104	P/P	80 - 120
2063940	Potassium	101	102	P/P	80 - 120
2063940	Sodium	98.6	101	P/P	80 - 120
2064291	Calcium	102		P	80 - 120
2064291	Iron	103		P	80 - 120
2064291	Magnesium	102		P	80 - 120
2064291	Potassium	99.3		P	80 - 120
2064291	Sodium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063939	Aluminum	98.2		P	80 - 120
2063939	Antimony	101		P	80 - 120
2063939	Arsenic	106		P	80 - 120
2063939	Barium	104		P	80 - 120
2063939	Boron	102		P	80 - 120
2063939	Cadmium	107		P	80 - 120
2063939	Chromium	106		P	80 - 120
2063939	Copper	109		P	80 - 120
2063939	Lead	106		P	80 - 120
2063939	Nickel	105		P	80 - 120
2063939	Selenium	99.4		P	80 - 120
2063939	Silver	102		P	80 - 120
2063939	Thallium	108		P	80 - 120
2063939	Zinc	105		P	80 - 120
2063961	Aluminum	98.3	98.7	P/P	80 - 120
2063961	Antimony	105	105	P/P	80 - 120
2063961	Arsenic	110	110	P/P	80 - 120
2063961	Barium	107	107	P/P	80 - 120
2063961	Boron	104	105	P/P	80 - 120
2063961	Cadmium	110	109	P/P	80 - 120
2063961	Chromium	110	110	P/P	80 - 120
2063961	Copper	110	110	P/P	80 - 120
2063961	Lead	109	108	P/P	80 - 120
2063961	Nickel	106	106	P/P	80 - 120
2063961	Selenium	101	102	P/P	80 - 120
2063961	Silver	105	105	P/P	80 - 120
2063961	Thallium	110	111	P/P	80 - 120
2063961	Zinc	106	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063878	Chloride	104		P	90 - 110
2063952	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063878	Sulfate	104		P	90 - 110
2063952	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063926	Ammonia-N	98.3	99.9	P/P	90 - 110

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

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063885	NO2NO3-N	99.6	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063884	Total-P	107	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063930	O-Phosphate-P	97.9	98.1	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P359412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063768	Acetochlor	97.2	108	P/P	63 - 129
2063768	Alachlor	86.9	93.6	P/P	65 - 127
2063768	Ametryn	96.4	108	P/P	40 - 164
2063768	Atrazine	93.5	104	P/P	66 - 135
2063768	Atrazine Desethyl	76.9	74.5	P/P	14 - 157
2063768	Azinphos Methyl	107	116	P/P	49 - 180
2063768	Bromacil	77.3	83.4	P/P	48 - 130
2063768	Butylate	52.0	44.7	P/P	10 - 94.0
2063768	Chlorpyrifos Ethyl	96.5	103	P/P	58 - 123
2063768	Chlorpyrifos Methyl	84.5	93.9	P/P	58 - 125
2063768	Cyanazine	79.3	88.3	P/P	24 - 253
2063768	Demeton	47.5	48.7	P/P	25 - 149
2063768	Diazinon	86.3	90.6	P/P	59 - 144
2063768	Dimethenamid	88.5	97.7	P/P	60 - 130
2063768	Disulfoton	87.1	95.4	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P359412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063768	Dithiopyr	86.5	91.2	P/P	60 - 130
2063768	EPTC	43.4	37.9	P/P	10 - 92.0
2063768	Ethion	92.2	101	P/P	30 - 148
2063768	Ethoprop	88.7	97.5	P/P	50 - 130
2063768	Fenamiphos	77.5	82.0	P/P	49 - 142
2063768	Fipronil	79.5	86.0	P/P	46 - 140
2063768	Fipronil Desulfinyl	66.2	69.0	P/P	60 - 130
2063768	Fipronil Sulfide	78.7	80.2	P/P	31 - 136
2063768	Fipronil Sulfone	82.5	75.3	P/P	16 - 136
2063768	Fonofos	84.8	96.0	P/P	55 - 129
2063768	Hexazinone	97.0	107	P/P	56 - 141
2063768	Malathion	101	108	P/P	56 - 135
2063768	Metalaxyl	87.4	93.7	P/P	54 - 135
2063768	Metolachlor	90.5	97.8	P/P	51 - 140
2063768	Metribuzin	153	166	P/P	45 - 254
2063768	Mevinphos	84.7	96.0	P/P	33 - 131
2063768	Molinate	70.3	71.0	P/P	14 - 98.0
2063768	Norflurazon	84.5	88.7	P/P	34 - 136
2063768	Oxadiazon	84.7	95.8	P/P	60 - 130
2063768	Parathion Ethyl	82.2	89.8	P/P	66 - 118
2063768	Parathion Methyl	101	109	P/P	64 - 136
2063768	Pendimethalin	91.8	94.0	P/P	59 - 144
2063768	Phorate	78.2	81.9	P/P	42 - 130
2063768	Prodiamine	87.6	101	P/P	60 - 130
2063768	Prometon	82.1	88.3	P/P	59 - 134
2063768	Prometryn	80.9	93.4	P/P	54 - 135
2063768	Simazine	99.5	112	P/P	53 - 156
2063768	Tebuconazole	92.6	96.6	P/P	30 - 100
2063768	Terbufos	84.3	95.3	P/P	57 - 131
2063768	Terbutylazine	85.9	96.9	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	MCPP	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: P359602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063522	Fluoride	97.2	98.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063786	Organic Carbon	94.5	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063879	Turbidity	4.80	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063940	Calcium	1.96	Spike	P	0 - 20
2063940	Iron	0.563	Spike	P	0 - 20
2063940	Magnesium	0.339	Spike	P	0 - 20
2063940	Potassium	0.756	Spike	P	0 - 20
2063940	Sodium	2.27	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063961	Aluminum	0.444	Spike	P	0 - 20
2063961	Antimony	0.247	Spike	P	0 - 20
2063961	Arsenic	0.172	Spike	P	0 - 20
2063961	Barium	0.0607	Spike	P	0 - 20
2063961	Boron	0.852	Spike	P	0 - 20
2063961	Cadmium	0.623	Spike	P	0 - 20
2063961	Chromium	0.546	Spike	P	0 - 20
2063961	Copper	0.395	Spike	P	0 - 20
2063961	Lead	0.303	Spike	P	0 - 20
2063961	Nickel	0.254	Spike	P	0 - 20
2063961	Selenium	0.444	Spike	P	0 - 20
2063961	Silver	0.179	Spike	P	0 - 20
2063961	Thallium	1.32	Spike	P	0 - 20
2063961	Zinc	0.376	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063952	Chloride	0.976	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063952	Sulfate	0.0265	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063926	Ammonia-N	1.50	Spike	P	0 - 20

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

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063885	NO2NO3-N	0.733	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063884	Total-P	5.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063930	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063768	Acetochlor	8.86	Spike	P	0 - 30
2063768	Alachlor	7.40	Spike	P	0 - 30
2063768	Ametryn	11.6	Spike	P	0 - 30
2063768	Atrazine	11.0	Spike	P	0 - 30
2063768	Atrazine Desethyl	3.15	Spike	P	0 - 30
2063768	Azinphos Methyl	7.88	Spike	P	0 - 30
2063768	Bromacil	7.65	Spike	P	0 - 30
2063768	Butylate	15.0	Spike	P	0 - 30
2063768	Chlorpyrifos Ethyl	6.78	Spike	P	0 - 30
2063768	Chlorpyrifos Methyl	10.5	Spike	P	0 - 30
2063768	Cyanazine	10.8	Spike	P	0 - 30
2063768	Demeton	2.53	Spike	P	0 - 30
2063768	Diazinon	4.95	Spike	P	0 - 30
2063768	Dimethenamid	9.89	Spike	P	0 - 30
2063768	Disulfoton	9.06	Spike	P	0 - 30
2063768	Dithiopyr	5.27	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063768	EPTC	13.6	Spike	P	0 - 30
2063768	Ethion	9.53	Spike	P	0 - 30
2063768	Ethoprop	9.35	Spike	P	0 - 30
2063768	Fenamiphos	5.68	Spike	P	0 - 30
2063768	Fipronil	7.77	Spike	P	0 - 30
2063768	Fipronil Desulfinyl	4.05	Spike	P	0 - 30
2063768	Fipronil Sulfide	1.95	Spike	P	0 - 30
2063768	Fipronil Sulfone	9.08	Spike	P	0 - 30
2063768	Fonofos	12.4	Spike	P	0 - 30
2063768	Hexazinone	8.83	Spike	P	0 - 30
2063768	Malathion	6.85	Spike	P	0 - 30
2063768	Metalaxyl	6.99	Spike	P	0 - 30
2063768	Metolachlor	7.13	Spike	P	0 - 30
2063768	Metribuzin	7.86	Spike	P	0 - 30
2063768	Mevinphos	12.6	Spike	P	0 - 30
2063768	Molinate	1.06	Spike	P	0 - 30
2063768	Norflurazon	4.90	Spike	P	0 - 30
2063768	Oxadiazon	12.3	Spike	P	0 - 30
2063768	Parathion Ethyl	8.83	Spike	P	0 - 30
2063768	Parathion Methyl	7.52	Spike	P	0 - 30
2063768	Pendimethalin	2.40	Spike	P	0 - 30
2063768	Phorate	4.66	Spike	P	0 - 30
2063768	Prodiamine	14.2	Spike	P	0 - 30
2063768	Prometon	7.27	Spike	P	0 - 30
2063768	Prometryn	14.4	Spike	P	0 - 30
2063768	Simazine	11.4	Spike	P	0 - 30
2063768	Tebuconazole	2.99	Spike	P	0 - 30
2063768	Terbufos	12.2	Spike	P	0 - 30
2063768	Terbutylazine	12.0	Spike	P	0 - 30
LFB	Acetochlor	10.0	LCS	P	0 - 30
LFB	Alachlor	9.12	LCS	P	0 - 30
LFB	Ametryn	15.0	LCS	P	0 - 30
LFB	Atrazine	3.69	LCS	P	0 - 30
LFB	Atrazine Desethyl	0.324	LCS	P	0 - 30
LFB	Azinphos Methyl	4.94	LCS	P	0 - 30
LFB	Bromacil	11.5	LCS	P	0 - 30
LFB	Butylate	13.4	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	11.4	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	10.3	LCS	P	0 - 30
LFB	Cyanazine	3.75	LCS	P	0 - 30
LFB	Demeton	11.8	LCS	P	0 - 30
LFB	Diazinon	10.4	LCS	P	0 - 30
LFB	Dimethenamid	9.87	LCS	P	0 - 30
LFB	Disulfoton	21.2	LCS	P	0 - 30
LFB	Dithiopyr	12.0	LCS	P	0 - 30
LFB	EPTC	16.6	LCS	P	0 - 30
LFB	Ethion	12.3	LCS	P	0 - 30
LFB	Ethoprop	11.3	LCS	P	0 - 30
LFB	Fenamiphos	9.07	LCS	P	0 - 30
LFB	Fipronil	4.21	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	7.04	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	9.15	LCS	P	0 - 30
LFB	Fipronil Sulfone	11.5	LCS	P	0 - 30
LFB	Fonofos	14.7	LCS	P	0 - 30
LFB	Hexazinone	10.4	LCS	P	0 - 30
LFB	Malathion	12.2	LCS	P	0 - 30
LFB	Metalaxyl	9.52	LCS	P	0 - 30
LFB	Metolachlor	10.0	LCS	P	0 - 30
LFB	Metribuzin	7.38	LCS	P	0 - 30
LFB	Mevinphos	13.0	LCS	P	0 - 30
LFB	Molinate	12.2	LCS	P	0 - 30
LFB	Norflurazon	5.90	LCS	P	0 - 30
LFB	Oxadiazon	13.1	LCS	P	0 - 30
LFB	Parathion Ethyl	8.45	LCS	P	0 - 30
LFB	Parathion Methyl	13.2	LCS	P	0 - 30
LFB	Pendimethalin	15.6	LCS	P	0 - 30
LFB	Phorate	12.2	LCS	P	0 - 30
LFB	Prodiamine	11.8	LCS	P	0 - 30
LFB	Prometon	5.99	LCS	P	0 - 30
LFB	Prometryn	11.3	LCS	P	0 - 30
LFB	Simazine	12.5	LCS	P	0 - 30
LFB	Tebuconazole	5.18	LCS	P	0 - 30
LFB	Terbufos	14.5	LCS	P	0 - 30
LFB	Terbuthylazine	13.5	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: P359247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063880	Color (true)	3.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063522	Total Alkalinity	0.263	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P359700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063847	TDS	4.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063522	Fluoride	0.940	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063786	Organic Carbon	0.560	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: 2063913
Field Sample ID: 19010136

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.2	P	30 - 160
EPA 8321B	Diuron-d6	49.9	P	30 - 160
EPA 8321B	Endothall-d6	153	P	40 - 160
EPA 8321B	Endothall-d6	153	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	79.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	79.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.3	P	30 - 160
EPA 8321B	Primidone-d5	76.8	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	40 - 160
EPA 8321B	Sucralose-d6	103	P	40 - 160

Lab Sample ID: 2063918
Field Sample ID: 19010136

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	90.5	P	68 - 130
EPA 8270D	Terbufos-d10	88.9	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A89535
Included Lab Sample IDs: 2063907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.6	98.0	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A89537
Included Lab Sample IDs: 2063907

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

Reference Method: EPA 8321B
Run ID: A89547
Included Lab Sample IDs: 2063913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	78.1	79.3	P/P	60 - 160
Glufosinate	105	102	P/P	60 - 160
Glyphosate	101	99.1	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A89552
Included Lab Sample IDs: 2063909

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A89599
Included Lab Sample IDs: 2063913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	101	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89610
Included Lab Sample IDs: 2063913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.5	92.3	P/P	50 - 150
Acetaminophen	113	107	P/P	60 - 160
Bentazon	79.2	69.6	P/P	50 - 160
Carbamazepine	98.8	99.8	P/P	60 - 150
Diuron	105	109	P/P	60 - 150
Fenuron	105	98.9	P/P	60 - 150
Fluridone	104	103	P/P	60 - 160
Hydrocodone	96.3	98.0	P/P	60 - 150
Ibuprofen	79.9	78.2	P/P	50 - 160
Imazapyr	98.7	106	P/P	50 - 150
Imidacloprid	95.4	103	P/P	60 - 150
Linuron	105	107	P/P	60 - 150
MCPP	104	102	P/P	50 - 150
Naproxen	116	66.4	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89610

Included Lab Sample IDs: 2063913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	100	103	P/P	60 - 150
Pyraclostrobin	99.3	99.2	P/P	60 - 150
Triclopyr	107	102	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89646

Included Lab Sample IDs: 2063908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2063916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.5	97.5	P/P	90 - 110
Antimony	98.4	99.4	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Barium	103	102	P/P	90 - 110
Boron	104	101	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	102	105	P/P	90 - 110
Copper	108	107	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Nickel	103	104	P/P	90 - 110
Selenium	98.9	99.4	P/P	90 - 110
Silver	98.0	98.4	P/P	90 - 110
Thallium	101	99.9	P/P	90 - 110
Zinc	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89651

Included Lab Sample IDs: 2063908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89666

Included Lab Sample IDs: 2063908

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063907

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063907

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

Reference Method: SM 2320 B-97

Run ID: A89680

Included Lab Sample IDs: 2063907

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

Reference Method: SM 4500 F-C-97

Run ID: A89680

Included Lab Sample IDs: 2063907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A89684

Included Lab Sample IDs: 2063918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.3		P	80 - 120
Alachlor	97.6		P	80 - 120
Ametryn	102		P	80 - 120
Atrazine	91.2		P	80 - 120
Atrazine Desethyl	97.0		P	80 - 120
Azinphos Methyl	106		P	80 - 120
Bromacil	96.6		P	80 - 120
Butylate	97.1		P	80 - 120
Chlorpyrifos Ethyl	101		P	80 - 120
Chlorpyrifos Methyl	98.0		P	80 - 120
Cyanazine	96.4		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	99.1		P	80 - 120
Dimethenamid	98.4		P	80 - 120
Disulfoton	98.6		P	80 - 120
Dithiopyr	97.4		P	80 - 120
EPTC	99.5		P	80 - 120
Ethion	98.2		P	80 - 120
Ethoprop	99.9		P	80 - 120
Fenamiphos	96.9		P	80 - 120
Fipronil	96.4		P	80 - 120
Fipronil Desulfinyl	99.2		P	80 - 120
Fipronil Sulfide	92.0		P	80 - 120
Fipronil Sulfone	97.7		P	80 - 120
Fonofos	94.9		P	80 - 120
Hexazinone	98.8		P	80 - 120
Malathion	97.6		P	80 - 120
Metalaxyl	100		P	80 - 120
Metolachlor	100		P	80 - 120
Metribuzin	87.2		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A89684

Included Lab Sample IDs: 2063918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mevinphos	101		P	80 - 120
Molinate	96.0		P	80 - 120
Norflurazon	96.0		P	80 - 120
Oxadiazon	99.8		P	80 - 120
Parathion Ethyl	95.8		P	80 - 120
Parathion Methyl	96.8		P	80 - 120
Pendimethalin	95.0		P	80 - 120
Phorate	96.1		P	80 - 120
Prodiamine	98.3		P	80 - 120
Prometon	95.4		P	80 - 120
Prometryn	96.7		P	80 - 120
Simazine	107		P	80 - 120
Tebuconazole	96.4		P	80 - 120
Terbufos	98.6		P	80 - 120
Terbuthylazine	97.1		P	80 - 120

Reference Method: SM 5310 B-00

Run ID: A89685

Included Lab Sample IDs: 2063908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.0	93.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89686

Included Lab Sample IDs: 2063913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	116	P/P	60 - 160
Endothall	94.2	96.3	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89758

Included Lab Sample IDs: 2063916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	103	P/P	95 - 105
Iron	102	101	P/P	95 - 105
Magnesium	102	102	P/P	95 - 105
Potassium	98.2	97.7	P/P	95 - 105
Sodium	101	98.9	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89772

Included Lab Sample IDs: 2063908

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

Quality Assurance Report

Calibration Verification

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							4.80	
EPA 200.7 Rev. 4.4	Calcium	105		103	105	102			1.96
	Iron	103		103	104	103			0.563
	Magnesium	103		103	104	102			0.339
	Potassium	99.1		101	102	99.3			0.756
	Sodium	101		98.6	101	98.3			2.27
EPA 200.8 Rev. 5.4	Aluminum	102		98.2	98.3	98.7			0.444
	Antimony	103		101	105	105			0.247
	Arsenic	108		106	110	110			0.172
	Barium	106		104	107	107			0.0607
	Boron	110		102	104	105			0.852
	Cadmium	108		107	110	109			0.623
	Chromium	109		106	110	110			0.546
	Copper	110		109	110	110			0.395
	Lead	107		106	109	108			0.303
	Nickel	108		105	106	106			0.254
	Selenium	103		99.4	101	102			0.444
	Silver	104		102	105	105			0.179
	Thallium	108		108	110	111			1.32
	Zinc	108		105	106	106			0.376
EPA 300.0 Rev. 2.1	Chloride	103		106	104			0.976	
	Sulfate	104		105	104			0.0265	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2		98.3	99.9				1.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		95.5	99.5				3.03
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		99.6	98.6				0.733
EPA 365.1 Rev. 2.0	Total-P	102		107	100				5.96
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		97.9	98.1				0.204
EPA 8270D	Acetochlor	90.6	100	97.2	108		10.0		8.86
	Alachlor	89.4	98.0	86.9	93.6		9.12		7.40
	Ametryn	86.7	101	96.4	108		15.0		11.6
	Atrazine	88.1	91.4	93.5	104		3.69		11.0
	Atrazine Desethyl	77.8	78.0	76.9	74.5		0.324		3.15
	Azinphos Methyl	109	115	107	116		4.94		7.88
	Bromacil	71.3	79.9	77.3	83.4		11.5		7.65
	Butylate	52.2	59.7	52.0	44.7		13.4		15.0
	Chlorpyrifos Ethyl	91.8	103	96.5	103		11.4		6.78
	Chlorpyrifos Methyl	88.6	98.2	84.5	93.9		10.3		10.5
	Cyanazine	93.1	96.6	79.3	88.3		3.75		10.8
	Demeton	81.5	91.7	47.5	48.7		11.8		2.53
	Diazinon	87.5	97.2	86.3	90.6		10.4		4.95
	Dimethenamid	90.2	99.6	88.5	97.7		9.87		9.89
	Disulfoton	84.3	104	87.1	95.4		21.2		9.06
	Dithiopyr	87.0	98.2	86.5	91.2		12.0		5.27
	EPTC	51.0	60.2	43.4	37.9		16.6		13.6
	Ethion	81.9	92.7	92.2	101		12.3		9.53
	Ethoprop	84.8	95.0	88.7	97.5		11.3		9.35
	Fenamiphos	75.0	82.2	77.5	82.0		9.07		5.68
	Fipronil	71.4	74.5	79.5	86.0		4.21		7.77
	Fipronil Desulfanyl	59.3	63.6	66.2	69.0		7.04		4.05
	Fipronil Sulfide	59.7	65.5	78.7	80.2		9.15		1.95
	Fipronil Sulfone	66.0	74.0	82.5	75.3		11.5		9.08
	Fonofos	82.1	95.2	84.8	96.0		14.7		12.4
	Hexazinone	90.0	99.9	97.0	107		10.4		8.83
	Malathion	91.6	103	101	108		12.2		6.85

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	86.6	95.3	87.4	93.7	9.52	6.99
	Metolachlor	89.2	98.7	90.5	97.8	10.0	7.13
	Metribuzin	151	163	153	166	7.38	7.86
	Mevinphos	75.7	86.2	84.7	96.0	13.0	12.6
	Molinate	67.6	76.3	70.3	71.0	12.2	1.06
	Norflurazon	79.4	84.2	84.5	88.7	5.90	4.90
	Oxadiazon	78.2	89.1	84.7	95.8	13.1	12.3
	Parathion Ethyl	83.6	90.9	82.2	89.8	8.45	8.83
	Parathion Methyl	96.6	110	101	109	13.2	7.52
	Pendimethalin	80.9	94.6	91.8	94.0	15.6	2.40
	Phorate	94.5	107	78.2	81.9	12.2	4.66
	Prodiamine	77.0	86.6	87.6	101	11.8	14.2
	Prometon	76.7	81.4	82.1	88.3	5.99	7.27
	Prometryn	77.4	86.7	80.9	93.4	11.3	14.4
	Simazine	106	120	99.5	112	12.5	11.4
	Tebuconazole	66.5	70.0	92.6	96.6	5.18	2.99
	Terbufos	84.8	98.1	84.3	95.3	14.5	12.2
	Terbutylazine	85.9	98.4	85.9	96.9	13.5	12.0
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)	98.3				3.05	
SM 2320 B-97	Total Alkalinity	106				0.263	
SM 2540 C-97	TDS					4.53	
SM 4500 F-C-97	Fluoride	95.6		97.2	98.4		0.940
SM 5310 B-00	Organic Carbon	95.0		94.5	95.2		0.560

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2063907

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	2063916
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2063916
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2063907
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2063907
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2063908
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2063908
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2063908
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2063908
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2063909
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2063918
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2063913
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2063913
SM 2120 B / E31780	True Color measured at 450 nm	2063907
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2063907
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2063907
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2063907
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2063907
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2063908

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	02/20/2019			02/20/2019 17:34	Julia Storbeck	2063907
EPA 200.7 Rev. 4.4	02/20/2019	02/28/2019 13:45	Elliott D. Healy	03/01/2019 14:33	Betina Topolski	2063916
EPA 200.8 Rev. 5.4	02/20/2019	02/21/2019 17:40	Elliott D. Healy	02/25/2019 21:15	Allison Taylor	2063916
EPA 300.0 Rev. 2.1	02/20/2019			03/01/2019 19:08	Lipi Saha	2063907
EPA 350.1 Rev. 2.0	02/20/2019			02/25/2019 12:33	Ping Hua	2063908
EPA 351.2 Rev. 2.0	02/20/2019	02/28/2019 12:15	Adrian Shelby	03/04/2019 11:39	Joseph Suarez	2063908
EPA 353.2 Rev. 2.0	02/20/2019			02/26/2019 11:49	Beverly Y. Sanders	2063908
EPA 365.1 Rev. 2.0	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 18:49	Rosalyn Ballman	2063908
EPA 365.1 Rev. 2.0 dissolved	02/20/2019			02/20/2019 17:15	Jhamieka S. Greenwood	2063909
EPA 8270D	02/20/2019	02/25/2019 08:10	Dinesh Mishra	02/26/2019 16:30	Vandana T. Nagar	2063918
EPA 8321B	02/20/2019	02/20/2019 13:00	Rebecca Ware	02/20/2019 15:35	Mohammad Ghaffari	2063913
	02/20/2019	02/20/2019 13:00	Rebecca Ware	02/21/2019 00:06	Rebecca Ware	2063913
	02/20/2019	02/20/2019 13:00	Rebecca Ware	02/22/2019 23:38	Mohammad Ghaffari	2063913
	02/20/2019	02/21/2019 10:00	Hoor Shaik	02/24/2019 21:55	Juyoung Kim	2063913
SM 2120 B	02/20/2019			02/20/2019 16:30	Chelsea Hernandez	2063907
SM 2320 B-97	02/20/2019			02/26/2019 12:32	Dale L. Simmons	2063907
SM 2540 C-97	02/20/2019			02/22/2019 15:01	Yijie Li	2063907
SM 2540 D-97	02/20/2019			02/22/2019 15:01	Yijie Li	2063907
SM 4500 F-C-97	02/20/2019			02/26/2019 12:32	Dale L. Simmons	2063907
SM 5310 B-00	02/20/2019			02/26/2019 09:02	Chelsea Hernandez	2063908