

Chemical Analysis Report

SE-DIST-2018-08-23-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

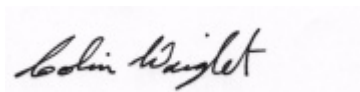
Event Description: **SMP- Broward**
Request ID: **RQ-2018-08-20-56**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 17-SEP-2018 12:08



NON-CONFORMANCE REPORT INCLUDED

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 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: North New River Canal (NNR-3)

Collection Date/Time: 08/22/2018 12:30

Field ID: G4SENNR3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019481	EPA 180.1 Rev. 2.0	Turbidity	1.0	A	NTU	P350784	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P350986	
		Sulfate	25		mg SO4/L	P350989	
	SM 2120 B	Color (true)	65		PCU	P350677	
	SM 2320 B-97	Total Alkalinity	164		mg CaCO3/L	P350902	
	SM 2540 C-97	TDS	371		mg/L	P351066	
	SM 2540 D-97	TSS	2	I	mg/L	P351028	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P350904	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P350915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P350753	
2019482	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P350856	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P350767	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P350876	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350696	
	EPA 8321B	Aldicarb	0.020	U	ug/L	P350552	
2019526		Aldicarb Sulfone	0.0020	U	ug/L	P350552	
		Aldicarb Sulfoxide	0.0020	UJ	ug/L	P350552	MS
		Carbaryl	0.0020	U	ug/L	P350552	
		Carbofuran	0.0020	U	ug/L	P350552	
		3-Hydroxycarbofuran	0.0020	U	ug/L	P350552	
		Methiocarb	0.0020	U	ug/L	P350552	
		Methomyl	0.0020	U	ug/L	P350552	
		Oxamyl	0.0020	U	ug/L	P350552	
		Propoxur	0.0020	U	ug/L	P350552	
		2,4-D	0.0068	I	ug/L	P350552	MS
2019527		Bentazon	0.031		ug/L	P350552	
		MCP	0.0020	U	ug/L	P350552	MS
		Triclopyr**	0.0040	U	ug/L	P350552	MS
		Imidacloprid	0.0020	U	ug/L	P350552	
		Diuron	0.0020	U	ug/L	P350552	
		Pyraclostrobin**	0.0020	U	ug/L	P350552	
		Primidone**	0.0040	U	ug/L	P350552	
		Linuron	0.0040	U	ug/L	P350552	
		Acetaminophen**	0.0080	U	ug/L	P350552	
		Fenuron	0.016	U	ug/L	P350552	
		Imazapyr**	0.036		ug/L	P350552	
		Carbamazepine**	8.0E-04	U	ug/L	P350552	
		Fluridone**	4.4E-04	I	ug/L	P350552	
		Hydrocodone**	8.0E-04	U	ug/L	P350552	
		Naproxen**	0.0080	U	ug/L	P350552	
		Ibuprofen**	0.020	U	ug/L	P350552	
		Sucralose**	0.010	U	ug/L	P350504	
		Glyphosate**	0.10	U	ug/L	P350504	

Field ID: G4SENNR3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019527	EPA 8321B	AMPA**	0.10	U	ug/L	P350504	
		Endothall**	0.10	U	ug/L	P350504	
		Glufosinate**	0.10	U	ug/L	P350504	
		Acesulfame K**	0.10	U	ug/L	P350504	MS
2019528	EPA 8270D	Aldrin	4.1	U	ng/L	P350656	
		Alpha-BHC	2.0	U	ng/L	P350656	
		Beta-BHC	4.1	U	ng/L	P350656	
		Delta-BHC	4.1	U	ng/L	P350656	MS
		Gamma-BHC	4.1	U	ng/L	P350656	
		Carbophenothion	4.1	U	ng/L	P350656	
		Chlorothalonil	2.0	U	ng/L	P350656	RPD
		Cypermethrin	20	U	ng/L	P350656	
		DDD-p,p'	3.1	U	ng/L	P350656	
		DDE-p,p'	3.1	U	ng/L	P350656	
		DDT-p,p'	3.1	U	ng/L	P350656	
		Dieldrin	4.1	U	ng/L	P350656	
		Endosulfan I	4.1	U	ng/L	P350656	
		Endosulfan II	4.1	U	ng/L	P350656	
		Endosulfan Sulfate	2.0	U	ng/L	P350656	
		Endrin	2.0	U	ng/L	P350656	
		Endrin Aldehyde	2.0	U	ng/L	P350656	
		Heptachlor	1.5	U	ng/L	P350656	
		Heptachlor Epoxide	2.0	U	ng/L	P350656	
		Methoxychlor	4.1	U	ng/L	P350656	
		Mirex	2.0	U	ng/L	P350656	
		Permethrin	10	U	ng/L	P350656	
		Trifluralin	1.0	U	ng/L	P350656	
		Alpha-Chlordane	1.0	U	ng/L	P350656	
		Gamma-Chlordane	1.0	U	ng/L	P350656	
		Endrin Ketone	2.0	U	ng/L	P350656	MS
		Dicofol	31	U	ng/L	P350656	
	EPA 8276	Chlordane	2.7	UQ	ng/L	P351047	
		Toxaphene	33	UQ	ng/L	P351047	
2019529	EPA 8270D	Alachlor	0.25	U	ng/L	P350647	
		Ametryn	5.2		ng/L	P350647	
		Atrazine	17		ng/L	P350647	
		Atrazine Desethyl	2.5	IJ	ng/L	P350647	RPD
		Azinphos Methyl	2.3	U	ng/L	P350647	
		Bromacil	0.51	U	ng/L	P350647	
		Butylate	0.41	U	ng/L	P350647	RPD
		Chlorpyrifos Ethyl	0.25	U	ng/L	P350647	
		Chlorpyrifos Methyl	0.10	U	ng/L	P350647	
		Demeton	2.0	U	ng/L	P350647	
		Diazinon	0.13	U	ng/L	P350647	
		Disulfoton	0.51	U	ng/L	P350647	

Field ID: G4SENNR3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019529	EPA 8270D	EPTC	1.3	U	ng/L	P350647	
		Ethion	0.15	U	ng/L	P350647	
		Ethoprop	0.10	U	ng/L	P350647	
		Fenamiphos	0.25	U	ng/L	P350647	
		Fipronil	0.25	U	ng/L	P350647	
		Fipronil Sulfide	0.15	U	ng/L	P350647	
		Fipronil Sulfone	0.15	U	ng/L	P350647	
		Hexazinone	4.7		ng/L	P350647	
		Malathion	0.36	U	ng/L	P350647	
		Metribuzin	0.77	I	ng/L	P350647	
		Mevinphos	0.51	U	ng/L	P350647	
		Molinate	0.31	U	ng/L	P350647	
		Norflurazon	0.51	U	ng/L	P350647	
		Pendimethalin	1.0	U	ng/L	P350647	
		Phorate	0.25	U	ng/L	P350647	
		Prometon	0.92	U	ng/L	P350647	
		Prometryn	0.21	I	ng/L	P350647	
		Simazine	0.51	U	ng/L	P350647	
		Terbufos	0.10	U	ng/L	P350647	
		Terbuthylazine	0.43	U	ng/L	P350647	
		Fonofos	0.20	U	ng/L	P350647	
		Metalaxyl	1.5		ng/L	P350647	
		Metolachlor	0.25	U	ng/L	P350647	
		Acetochlor	0.25	U	ng/L	P350647	
		Cyanazine	0.51	UJ	ng/L	P350647	RPD
		Parathion Ethyl	0.25	U	ng/L	P350647	
		Parathion Methyl	0.25	U	ng/L	P350647	
2019532	EPA 200.7 Rev. 4.4	Calcium	49.3		mg/L	P350680	
		Iron	56	I	ug/L	P350680	
		Magnesium	15.3		mg/L	P350680	
		Potassium	4.3		mg/L	P350680	
		Sodium	42.9		mg/L	P350680	
		Zinc	5.0	U	ug/L	P350680	
	EPA 200.8 Rev. 5.4	Arsenic	0.88		ug/L	P350680	
		Cadmium	0.020	U	ug/L	P350680	
		Chromium	0.40	U	ug/L	P350680	
		Copper	0.20	U	ug/L	P350680	
		Lead	0.052	I	ug/L	P350680	
		Nickel	0.20	U	ug/L	P350680	
		Silver	0.010	U	ug/L	P350680	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: 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 8321B: Refer to the narrative for an explanation of QC Codes.

EPA 8276: The sample expired for preparation due to the need for re-extraction. Insufficient sample to perform duplicate matrix spikes.

EPA 8270D: Refer to the narrative for an explanation of QC Codes.

Sample Location: West Lake @ Sheridan

Collection Date/Time: 08/22/2018 12:45

Field ID: G4SE0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019475	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	152		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	16		mg/L	P351032	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P350905	
2019476	EPA 350.1 Rev. 2.0	Ammonia-N	0.007	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46	Y	mg N/L	P350823	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014	Y	mg N/L	P351122	
	EPA 365.1 Rev. 2.0	Total-P	0.019	YJ	mg P/L	P350862	MS
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P350837	
2019477	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350698	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 353.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC. Refer to the narrative for an explanation of QC Codes.

Sample Location: Dania Cutoff @ US 1

Collection Date/Time: 08/22/2018 13:00

Field ID: G4SE0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019484	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P350784	
	SM 2320 B-97	Total Alkalinity	186		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	3	U	mg/L	P351032	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P351054	
2019485	EPA 350.1 Rev. 2.0	Ammonia-N	0.12	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75	Y	mg N/L	P350823	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21	Y	mg N/L	P351122	
	EPA 365.1 Rev. 2.0	Total-P	0.035	Y	mg P/L	P350862	MS
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P350837	
2019486	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P350698	
2019533	EPA 200.7 Rev. 4.4	Iron	100	I	ug/L	P350868	
	EPA 200.8 Rev. 5.4	Arsenic	1.71		ug/L	P350868	
		Cadmium	0.060	U	ug/L	P350868	
		Chromium	1.2	U	ug/L	P350868	
		Copper	3.2		ug/L	P350868	
		Lead	0.15	U	ug/L	P350868	
		Nickel	0.60	U	ug/L	P350868	
		Silver	0.030	U	ug/L	P350868	
		Zinc	6.0	U	ug/L	P350868	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: 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 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 353.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Sospiro @ Las Olas

Collection Date/Time: 08/22/2018 13:00

Field ID: G4SE0032

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019469	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	3	U	mg/L	P351032	
	SM 4500 F-C-97	Fluoride	0.70		mg F/L	P350905	
2019470	EPA 350.1 Rev. 2.0	Ammonia-N	0.006	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P350751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072	Y	mg N/L	P351122	
	EPA 365.1 Rev. 2.0	Total-P	0.025	Y	mg P/L	P350862	MS
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P350837	
2019471	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P350698	
2019530	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P350868	
	EPA 200.8 Rev. 5.4	Arsenic	1.97		ug/L	P350868	
		Cadmium	0.060	U	ug/L	P350868	
		Chromium	1.2	U	ug/L	P350868	
		Copper	6.1		ug/L	P350868	
		Lead	0.36	I	ug/L	P350868	
		Nickel	0.60	U	ug/L	P350868	
		Silver	0.030	U	ug/L	P350868	
		Zinc	8.1	IJ	ug/L	P350868	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 353.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 09/10/2018. The zinc recovery in the batch PQL was outside of the acceptable limit. The zinc result may be biased high.

Sample Location: C-13 East/NW 21st Ave Bridge

Collection Date/Time: 08/22/2018 14:00

Field ID: G4SEB011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019472	EPA 180.1 Rev. 2.0	Turbidity	7.0		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	198		mg CaCO3/L	P350902	
	SM 2540 D-97	TSS	5	IA	mg/L	P351031	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P350904	
2019473	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P350915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P350753	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P350856	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P350767	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P350876	
2019474	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350696	
2019531	EPA 200.7 Rev. 4.4	Iron	250		ug/L	P350680	
		Zinc	5.0	U	ug/L	P350680	
	EPA 200.8 Rev. 5.4	Arsenic	1.22		ug/L	P350680	
		Cadmium	0.020	U	ug/L	P350680	
		Chromium	0.40	U	ug/L	P350680	
		Copper	1.25		ug/L	P350680	
		Lead	0.31		ug/L	P350680	
		Nickel	0.20	U	ug/L	P350680	
		Silver	0.010	U	ug/L	P350680	

Ref. Method and Comment:

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

Sample Location: Snake Creek Canal @ Stirling

Collection Date/Time: 08/22/2018 14:10

Field ID: G4SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019478	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P350783	
	EPA 300.0 Rev. 2.1	Chloride	63		mg Cl/L	P350986	
		Sulfate	4.2		mg SO4/L	P350989	
	SM 2120 B	Color (true)	40		PCU	P350679	
	SM 2320 B-97	Total Alkalinity	224		mg CaCO3/L	P350902	
	SM 2540 C-97	TDS	360		mg/L	P351066	
	SM 2540 D-97	TSS	3	I	mg/L	P351028	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P350904	
2019479	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P350915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P350753	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P350856	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P350767	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P350876	
2019480	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350696	

Ref. Method and Comment:

SM 2120 B: Batch relative percent difference is unavailable due to analytical difficulties.

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

Non-Conformance Report

NCR ID: 7193

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SE-DIST-2018-08-23-02	TLH-2018-08-23-33	2019470	W-TOC
SE-DIST-2018-08-23-02	TLH-2018-08-23-33	2019476	W-TOC
SE-DIST-2018-08-23-02	TLH-2018-08-23-33	2019485	W-TOC

NCR Type: CUSTODY

NCR Category: General

Observation: Sample was not stored in refrigerator the night of 08/27/2018.

Resolution: Sample was returned to refrigerator on the morning of 08/28/2018. Analyses requiring refrigeration that were prepared or, if preparation is not required, analyzed on or after 08/28/2018 will be Y qualified for incorrect preservation.

Authorized by/Date: Peter D. Kaus 9/12/2018

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350783

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350784

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350680

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350868

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350680

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350868

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	2.0	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350986

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350989

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350915

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350753

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350823

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350856

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350767

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350862

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350696

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

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

Reference Method: EPA 8270D
Batch ID: P350647

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
Cyanazine	0.50	U	ng/L
Demeton	2.0	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.50	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	0.25	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P350647

Component	Result	Code	Units
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	1.0	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
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8270D
Batch ID: P350656

Component	Result	Code	Units
Aldrin	4.0	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	4.0	U	ng/L
Carbophenothion	4.0	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cypermethrin	20	U	ng/L
DDD-p,p'	3.0	U	ng/L
DDE-p,p'	3.0	U	ng/L
DDT-p,p'	3.0	U	ng/L
Delta-BHC	4.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	4.0	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Gamma-BHC	4.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Methoxychlor	4.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Trifluralin	1.0	U	ng/L

Reference Method: EPA 8276
Batch ID: P351047

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Toxaphene	30	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P350504

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.10	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: P350552

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
3-Hydroxycarbofuran	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Aldicarb	0.020	U	ug/L
Aldicarb Sulfone	0.0020	U	ug/L
Aldicarb Sulfoxide	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Carbaryl	0.0020	U	ug/L
Carbofuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Methiocarb	0.0020	U	ug/L
Methomyl	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Oxamyl	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Propoxur	0.0020	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P350677

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P350679

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P350902

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

Reference Method: SM 2320 B-97
Batch ID: P350903

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

Reference Method: SM 2540 C-97
Batch ID: P351066

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351028

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351031

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351032

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350904

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P351054

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P350837

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

Reference Method: SM 5310 B-00
Batch ID: P350876

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: P350680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	105		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	102		P	85 - 115
Sodium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	98.9		P	85 - 115
Copper	97.6		P	85 - 115
Lead	102		P	85 - 115
Nickel	101		P	85 - 115
Silver	99.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	109		P	85 - 115
Copper	97.7		P	85 - 115
Lead	99.2		P	85 - 115
Nickel	99.4		P	85 - 115
Silver	105		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350986

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350989

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350753

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350823

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350856

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350767

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P350696

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P350698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P350647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	108	106	P/P	74 - 119
Alachlor	108	106	P/P	75 - 118
Ametryn	109	110	P/P	59 - 137
Atrazine	110	109	P/P	73 - 120
Atrazine Desethyl	107	74.0	P/P	19 - 129
Azinphos Methyl	129	120	P/P	65 - 181
Bromacil	95.9	96.0	P/P	43 - 123
Butylate	76.1	82.3	P/P	28 - 85.0
Chlorpyrifos Ethyl	102	107	P/P	55 - 112
Chlorpyrifos Methyl	103	101	P/P	35 - 124
Cyanazine	189	123	P/P	26 - 262
Demeton	87.8	88.8	P/P	43 - 122
Diazinon	113	111	P/P	72 - 120
Disulfoton	98.4	91.1	P/P	45 - 137
EPTC	78.2	82.0	P/P	28 - 95.0
Ethion	107	110	P/P	63 - 127
Ethoprop	102	102	P/P	63 - 109
Fenamiphos	104	103	P/P	66 - 136
Fipronil	104	108	P/P	63 - 126
Fipronil Sulfide	95.0	102	P/P	59 - 123
Fipronil Sulfone	88.6	101	P/P	56 - 122
Fonofos	100	95.2	P/P	64 - 114
Hexazinone	106	108	P/P	49 - 144
Malathion	111	117	P/P	68 - 131
Metaxyl	108	92.5	P/P	57 - 126
Metolachlor	110	112	P/P	75 - 118
Metribuzin	152	113	P/P	46 - 169
Mevinphos	97.8	84.7	P/P	34 - 126
Molinate	79.2	85.0	P/P	37 - 101
Norflurazon	95.6	103	P/P	63 - 127
Parathion Ethyl	103	103	P/P	78 - 109
Parathion Methyl	107	102	P/P	74 - 123
Pendimethalin	123	127	P/P	51 - 130
Phorate	92.8	87.1	P/P	53 - 116
Prometon	104	99.9	P/P	66 - 124
Prometryn	104	104	P/P	66 - 124
Simazine	109	108	P/P	62 - 134
Terbufos	103	96.8	P/P	59 - 115
Terbutylazine	107	109	P/P	76 - 113

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P350656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	65.9	76.9	P/P	24 - 89.0
Alpha-BHC	81.5	94.8	P/P	58 - 117
Alpha-Chlordane	85.2	94.2	P/P	56 - 115
Beta-BHC	105	115	P/P	55 - 137
Carbophenothion	89.9	69.8	P/P	37 - 145
Chlorothalonil	85.0	90.1	P/P	26 - 163
Cypermethrin	86.8	96.9	P/P	42 - 156
DDD-p,p'	109	116	P/P	59 - 129
DDE-p,p'	83.9	93.8	P/P	52 - 117
DDT-p,p'	93.2	102	P/P	48 - 128
Delta-BHC	114	118	P/P	59 - 158
Dicofol	91.3	95.3	P/P	19 - 124
Dieldrin	90.9	98.6	P/P	57 - 126
Endosulfan I	92.0	98.9	P/P	59 - 133
Endosulfan II	97.5	112	P/P	58 - 148
Endosulfan Sulfate	116	115	P/P	56 - 135
Endrin	95.7	102	P/P	50 - 140
Endrin Aldehyde	111	88.3	P/P	47 - 141
Endrin Ketone	114	113	P/P	63 - 123
Gamma-BHC	105	115	P/P	59 - 132
Gamma-Chlordane	82.8	91.8	P/P	55 - 112
Heptachlor	70.2	79.0	P/P	45 - 102
Heptachlor Epoxide	89.8	98.7	P/P	61 - 116
Methoxychlor	103	116	P/P	60 - 133
Mirex	76.6	82.3	P/P	40 - 98.0
Permethrin	87.2	95.9	P/P	45 - 131
Trifluralin	77.0	83.4	P/P	38 - 179

Reference Method: EPA 8276

Batch ID: P351047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	84.9	77.3	P/P	47 - 125
Toxaphene	71.0	63.9	P/P	46 - 147

Reference Method: EPA 8321B

Batch ID: P350504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	77.2		P	40 - 150
AMPA	147		P	40 - 150
Endothall	86.9		P	40 - 150
Glufosinate	112		P	40 - 150
Glyphosate	98.5		P	40 - 140
Sucralose	89.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P350552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.0		P	40 - 150
3-Hydroxycarbofuran	93.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P350552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	113		P	30 - 150
Aldicarb	74.6		P	30 - 150
Aldicarb Sulfone	102		P	40 - 150
Aldicarb Sulfoxide	99.7		P	40 - 150
Bentazon	124		P	30 - 150
Carbamazepine	73.5		P	40 - 150
Carbaryl	56.4		P	40 - 150
Carbofuran	74.2		P	40 - 150
Diuron	79.4		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	70.9		P	40 - 150
Hydrocodone	95.7		P	40 - 150
Ibuprofen	99.1		P	40 - 150
Imazapyr	89.1		P	40 - 150
Imidacloprid	104		P	40 - 160
Linuron	58.1		P	40 - 150
MCPP	99.3		P	40 - 150
Methiocarb	54.6		P	40 - 150
Methomyl	91.1		P	40 - 150
Naproxen	82.8		P	40 - 150
Oxamyl	106		P	40 - 150
Primidone	102		P	40 - 150
Propoxur	78.9		P	40 - 150
Pyraclostrobin	61.7		P	40 - 150
Triclopyr	104		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P350677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P350679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P350902

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

Reference Method: SM 2320 B-97
Batch ID: P350903

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P350904

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P350905

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

Reference Method: SM 4500 F-C-97
Batch ID: P351054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P350876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019133	Calcium	108	109	P/P	80 - 120
2019133	Iron	106	107	P/P	80 - 120
2019133	Magnesium	109	110	P/P	80 - 120
2019133	Potassium	107	107	P/P	80 - 120
2019133	Sodium	102	102	P/P	80 - 120
2019133	Zinc	102	104	P/P	80 - 120
2019437	Calcium	105		P	80 - 120
2019437	Iron	104		P	80 - 120
2019437	Magnesium	103		P	80 - 120
2019437	Potassium	100		P	80 - 120
2019437	Sodium	97.9		P	80 - 120
2019437	Zinc	102		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019530	Iron	101	103	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019133	Arsenic	102	100	P/P	80 - 120
2019133	Cadmium	103	101	P/P	80 - 120
2019133	Chromium	97.3	97.7	P/P	80 - 120
2019133	Copper	98.8	96.9	P/P	80 - 120
2019133	Lead	102	99.3	P/P	80 - 120
2019133	Nickel	99.9	98.2	P/P	80 - 120
2019133	Silver	99.0	98.0	P/P	80 - 120
2019437	Arsenic	105		P	80 - 120
2019437	Cadmium	103		P	80 - 120
2019437	Chromium	98.2		P	80 - 120
2019437	Copper	97.0		P	80 - 120
2019437	Lead	103		P	80 - 120
2019437	Nickel	99.3		P	80 - 120
2019437	Silver	99.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019530	Arsenic	108	109	P/P	70 - 130
2019530	Cadmium	98.7	95.2	P/P	70 - 130
2019530	Chromium	91.5	91.2	P/P	70 - 130
2019530	Copper	93.1	94.5	P/P	70 - 130
2019530	Lead	109	110	P/P	70 - 130
2019530	Nickel	93.9	94.0	P/P	70 - 130
2019530	Silver	96.8	97.5	P/P	70 - 130
2019530	Zinc	91.8	92.0	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019112	Chloride	101		P	90 - 110
2019302	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019112	Sulfate	98.6		P	90 - 110
2019302	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019397	Ammonia-N	95.6	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019403	Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019404	Kjeldahl Nitrogen	104	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019397	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020038	Kjeldahl Nitrogen	98.6	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019398	NO2NO3-N	97.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019410	NO2NO3-N	91.5	92.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019632	Total-P	96.4	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019476	Total-P	88.7	94.2	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019399	O-Phosphate-P	96.6	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019405	O-Phosphate-P	98.2	97.1	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P350647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018950	Acetochlor	105	106	P/P	67 - 125
2018950	Alachlor	105	108	P/P	69 - 123
2018950	Ametryn	98.0	112	P/P	52 - 151
2018950	Atrazine	111	110	P/P	71 - 125
2018950	Atrazine Desethyl	73.6	74.9	P/P	10 - 129
2018950	Azinphos Methyl	116	115	P/P	48 - 200
2018950	Bromacil	95.6	97.4	P/P	46 - 130
2018950	Butylate	56.1	80.1	P/P	10 - 85.0
2018950	Chlorpyrifos Ethyl	109	111	P/P	54 - 115
2018950	Chlorpyrifos Methyl	104	101	P/P	44 - 117
2018950	Cyanazine	134	155	P/P	10 - 262
2018950	Demeton	80.6	73.9	P/P	24 - 145
2018950	Diazinon	105	109	P/P	66 - 129
2018950	Disulfoton	90.2	88.1	P/P	45 - 139
2018950	EPTC	52.5	69.9	P/P	10 - 86.0
2018950	Ethion	115	114	P/P	59 - 133
2018950	Ethoprop	90.5	93.5	P/P	54 - 116
2018950	Fenamiphos	113	114	P/P	55 - 140
2018950	Fipronil	109	106	P/P	37 - 142
2018950	Fipronil Sulfide	109	105	P/P	37 - 130
2018950	Fipronil Sulfone	108	99.0	P/P	18 - 143
2018950	Fonofos	92.3	92.5	P/P	55 - 118
2018950	Hexazinone	109	113	P/P	62 - 140
2018950	Malathion	119	119	P/P	64 - 132
2018950	Metalaxyl	100	103	P/P	55 - 129
2018950	Metolachlor	109	111	P/P	56 - 137
2018950	Metribuzin	118	119	P/P	16 - 218
2018950	Mevinphos	74.5	80.9	P/P	34 - 129

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P350647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018950	Molinate	62.3	72.5	P/P	16 - 99.0
2018950	Norflurazon	102	99.7	P/P	43 - 135
2018950	Parathion Ethyl	104	104	P/P	71 - 112
2018950	Parathion Methyl	104	102	P/P	65 - 127
2018950	Pendimethalin	124	125	P/P	35 - 159
2018950	Phorate	81.2	81.8	P/P	41 - 129
2018950	Prometon	103	106	P/P	56 - 140
2018950	Prometryn	104	106	P/P	65 - 130
2018950	Simazine	105	106	P/P	54 - 148
2018950	Terbufos	94.1	95.9	P/P	53 - 126
2018950	Terbutylazine	109	110	P/P	73 - 114

Reference Method: EPA 8270D
Batch ID: P350656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018949	Aldrin	68.1	58.1	P/P	26 - 96.0
2018949	Alpha-BHC	95.3	73.0	P/P	51 - 123
2018949	Alpha-Chlordane	90.3	78.8	P/P	45 - 120
2018949	Beta-BHC	120	105	P/P	43 - 146
2018949	Carbophenothion	93.3	101	P/P	26 - 179
2018949	Chlorothalonil	125	78.4	P/P	10 - 215
2018949	Cypermethrin	110	86.6	P/P	35 - 169
2018949	DDD-p,p'	112	99.8	P/P	49 - 131
2018949	DDE-p,p'	85.9	74.5	P/P	39 - 127
2018949	DDT-p,p'	96.9	86.2	P/P	49 - 120
2018949	Delta-BHC	229	204	F/F	49 - 187
2018949	Dicofol	118	114	P/P	10 - 129
2018949	Dieldrin	98.0	88.6	P/P	46 - 132
2018949	Endosulfan I	111	96.0	P/P	57 - 130
2018949	Endosulfan II	115	116	P/P	52 - 148
2018949	Endosulfan Sulfate	123	115	P/P	55 - 129
2018949	Endrin	106	91.6	P/P	45 - 133
2018949	Endrin Aldehyde	114	92.3	P/P	26 - 140
2018949	Endrin Ketone	139	122	F/P	60 - 125
2018949	Gamma-BHC	120	105	P/P	50 - 145
2018949	Gamma-Chlordane	88.1	75.0	P/P	44 - 118
2018949	Heptachlor	75.9	65.0	P/P	35 - 106
2018949	Heptachlor Epoxide	96.6	86.4	P/P	52 - 123
2018949	Methoxychlor	117	108	P/P	54 - 132
2018949	Mirex	78.0	62.0	P/P	36 - 107
2018949	Permethrin	99.7	82.4	P/P	47 - 135
2018949	Trifluralin	86.6	73.8	P/P	32 - 228

Reference Method: EPA 8276
Batch ID: P351047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019943	Chlordane	50.5		P	41 - 134
2019943	Toxaphene	59.4		P	39 - 158

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P350504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019172	Acesulfame K	26.4	20.8	F/F	40 - 150
2019172	AMPA	101	99.7	P/P	40 - 150
2019172	Endothall	128	139	P/P	40 - 150
2019172	Glufosinate	105	112	P/P	40 - 150
2019172	Glyphosate	67.1	66.2	P/P	40 - 140
2019172	Sucralose	103	106	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P350552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019526	3-Hydroxycarbofuran	62.0	62.3	P/P	40 - 150
2019526	Aldicarb	48.0	49.5	P/P	30 - 150
2019526	Aldicarb Sulfone	74.0	73.6	P/P	40 - 150
2019526	Aldicarb Sulfoxide	31.5	32.3	F/F	40 - 150
2019526	Carbaryl	41.3	41.3	P/P	40 - 150
2019526	Carbofuran	48.1	46.6	P/P	40 - 150
2019526	Methiocarb	44.4	44.6	P/P	40 - 150
2019526	Methomyl	65.3	59.4	P/P	40 - 150
2019526	Oxamyl	71.0	71.2	P/P	40 - 150
2019526	Propoxur	46.8	44.4	P/P	40 - 150
2019699	2,4-D	180	141	F/P	40 - 150
2019699	Acetaminophen	135	138	P/P	30 - 150
2019699	Bentazon	99.7	87.8	P/P	30 - 150
2019699	Carbamazepine	56.2	56.9	P/P	40 - 150
2019699	Diuron	64.4	64.8	P/P	40 - 150
2019699	Fenuron	75.4	76.2	P/P	40 - 150
2019699	Fluridone	58.9	57.5	P/P	40 - 150
2019699	Hydrocodone	84.2	80.4	P/P	40 - 150
2019699	Ibuprofen	96.9	92.2	P/P	40 - 150
2019699	Imazapyr	100	91.1	P/P	40 - 150
2019699	Imidacloprid	158	156	P/P	40 - 160
2019699	Linuron	54.8	57.3	P/P	40 - 150
2019699	MCPP	162	170	F/F	40 - 150
2019699	Naproxen	109	104	P/P	40 - 150
2019699	Primidone	91.9	91.1	P/P	40 - 150
2019699	Pyraclostrobin	71.0	68.6	P/P	40 - 150
2019699	Triclopyr	182	182	F/F	40 - 150

Reference Method: SM 4500 F-C-97

Batch ID: P350904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019112	Fluoride	98.4	98.4	P/P	91 - 105

Reference Method: SM 4500 F-C-97

Batch ID: P350905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019401	Fluoride	96.5	97.9	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P351054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019484	Fluoride	96.1	96.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018533	Organic Carbon	97.3	97.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P350876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019393	Organic Carbon	99.6	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019395	Turbidity	8.05	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019133	Calcium	1.41	Spike	P	0 - 20
2019133	Iron	1.41	Spike	P	0 - 20
2019133	Magnesium	0.918	Spike	P	0 - 20
2019133	Potassium	0.732	Spike	P	0 - 20
2019133	Sodium	0.0594	Spike	P	0 - 20
2019133	Zinc	2.00	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P350868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019530	Iron	1.64	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019133	Arsenic	1.96	Spike	P	0 - 20
2019133	Cadmium	2.05	Spike	P	0 - 20
2019133	Chromium	0.403	Spike	P	0 - 20
2019133	Copper	1.97	Spike	P	0 - 20
2019133	Lead	2.82	Spike	P	0 - 20
2019133	Nickel	1.74	Spike	P	0 - 20
2019133	Silver	1.02	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P350868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019530	Arsenic	0.735	Spike	P	0 - 20
2019530	Cadmium	3.65	Spike	P	0 - 20
2019530	Chromium	0.349	Spike	P	0 - 20
2019530	Copper	1.14	Spike	P	0 - 20
2019530	Lead	1.13	Spike	P	0 - 20
2019530	Nickel	0.170	Spike	P	0 - 20
2019530	Silver	0.732	Spike	P	0 - 20
2019530	Zinc	0.222	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019112	Chloride	0.922	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019112	Sulfate	0.483	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019397	Ammonia-N	1.70	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019403	Ammonia-N	0.973	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019404	Kjeldahl Nitrogen	3.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019397	Kjeldahl Nitrogen	0.555	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020038	Kjeldahl Nitrogen	1.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019398	NO2NO3-N	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019410	NO2NO3-N	0.545	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019632	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019476	Total-P	5.95	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019399	O-Phosphate-P	0.341	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019405	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P350647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018950	Acetochlor	0.802	Spike	P	0 - 30
2018950	Alachlor	2.64	Spike	P	0 - 30
2018950	Ametryn	12.9	Spike	P	0 - 30
2018950	Atrazine	0.292	Spike	P	0 - 30
2018950	Atrazine Desethyl	1.83	Spike	P	0 - 30
2018950	Azinphos Methyl	0.996	Spike	P	0 - 30
2018950	Bromacil	1.80	Spike	P	0 - 30
2018950	Butylate	35.3	Spike	F	0 - 30
2018950	Chlorpyrifos Ethyl	2.08	Spike	P	0 - 30
2018950	Chlorpyrifos Methyl	2.87	Spike	P	0 - 30
2018950	Cyanazine	14.7	Spike	P	0 - 30
2018950	Demeton	8.71	Spike	P	0 - 30
2018950	Diazinon	3.87	Spike	P	0 - 30
2018950	Disulfoton	2.28	Spike	P	0 - 30
2018950	EPTC	28.4	Spike	P	0 - 30
2018950	Ethion	1.45	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P350647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018950	Ethoprop	3.18	Spike	P	0 - 30
2018950	Fenamiphos	1.11	Spike	P	0 - 30
2018950	Fipronil	2.36	Spike	P	0 - 30
2018950	Fipronil Sulfide	3.48	Spike	P	0 - 30
2018950	Fipronil Sulfone	8.22	Spike	P	0 - 30
2018950	Fonofos	0.276	Spike	P	0 - 30
2018950	Hexazinone	3.38	Spike	P	0 - 30
2018950	Malathion	0.231	Spike	P	0 - 30
2018950	Metalaxyl	2.15	Spike	P	0 - 30
2018950	Metolachlor	1.85	Spike	P	0 - 30
2018950	Metribuzin	0.857	Spike	P	0 - 30
2018950	Mevinphos	8.35	Spike	P	0 - 30
2018950	Molinate	15.2	Spike	P	0 - 30
2018950	Norflurazon	2.60	Spike	P	0 - 30
2018950	Parathion Ethyl	0.0953	Spike	P	0 - 30
2018950	Parathion Methyl	2.05	Spike	P	0 - 30
2018950	Pendimethalin	1.12	Spike	P	0 - 30
2018950	Phorate	0.716	Spike	P	0 - 30
2018950	Prometon	2.30	Spike	P	0 - 30
2018950	Prometryn	1.27	Spike	P	0 - 30
2018950	Simazine	1.26	Spike	P	0 - 30
2018950	Terbufos	1.97	Spike	P	0 - 30
2018950	Terbuthylazine	1.04	Spike	P	0 - 30
LFB	Acetochlor	1.33	LCS	P	0 - 30
LFB	Alachlor	1.58	LCS	P	0 - 30
LFB	Ametryn	0.531	LCS	P	0 - 30
LFB	Atrazine	1.19	LCS	P	0 - 30
LFB	Atrazine Desethyl	36.4	LCS	F	0 - 30
LFB	Azinphos Methyl	7.24	LCS	P	0 - 30
LFB	Bromacil	0.0381	LCS	P	0 - 30
LFB	Butylate	7.89	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	4.76	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	1.83	LCS	P	0 - 30
LFB	Cyanazine	42.7	LCS	F	0 - 30
LFB	Demeton	1.15	LCS	P	0 - 30
LFB	Diazinon	2.24	LCS	P	0 - 30
LFB	Disulfoton	7.70	LCS	P	0 - 30
LFB	EPTC	4.71	LCS	P	0 - 30
LFB	Ethion	2.73	LCS	P	0 - 30
LFB	Ethoprop	0.348	LCS	P	0 - 30
LFB	Fenamiphos	1.04	LCS	P	0 - 30
LFB	Fipronil	4.14	LCS	P	0 - 30
LFB	Fipronil Sulfide	7.60	LCS	P	0 - 30
LFB	Fipronil Sulfone	12.7	LCS	P	0 - 30
LFB	Fonofos	4.93	LCS	P	0 - 30
LFB	Hexazinone	1.80	LCS	P	0 - 30
LFB	Malathion	4.51	LCS	P	0 - 30
LFB	Metalaxyl	15.2	LCS	P	0 - 30
LFB	Metolachlor	1.93	LCS	P	0 - 30
LFB	Metribuzin	29.8	LCS	P	0 - 30
LFB	Mevinphos	14.3	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P350647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Molinate	7.02	LCS	P	0 - 30
LFB	Norflurazon	7.28	LCS	P	0 - 30
LFB	Parathion Ethyl	0.191	LCS	P	0 - 30
LFB	Parathion Methyl	4.51	LCS	P	0 - 30
LFB	Pendimethalin	3.67	LCS	P	0 - 30
LFB	Phorate	6.35	LCS	P	0 - 30
LFB	Prometon	4.41	LCS	P	0 - 30
LFB	Prometryn	0.339	LCS	P	0 - 30
LFB	Simazine	0.826	LCS	P	0 - 30
LFB	Terbufos	6.32	LCS	P	0 - 30
LFB	Terbuthylazine	1.72	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P350656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018949	Aldrin	15.8	Spike	P	0 - 30
2018949	Alpha-BHC	26.5	Spike	P	0 - 30
2018949	Alpha-Chlordane	13.5	Spike	P	0 - 30
2018949	Beta-BHC	13.4	Spike	P	0 - 30
2018949	Carbophenothion	8.30	Spike	P	0 - 30
2018949	Chlorothalonil	45.4	Spike	F	0 - 30
2018949	Cypermethrin	24.2	Spike	P	0 - 30
2018949	DDD-p,p'	11.3	Spike	P	0 - 30
2018949	DDE-p,p'	14.2	Spike	P	0 - 30
2018949	DDT-p,p'	11.7	Spike	P	0 - 30
2018949	Delta-BHC	11.6	Spike	P	0 - 30
2018949	Dicofol	3.40	Spike	P	0 - 30
2018949	Dieldrin	10.0	Spike	P	0 - 30
2018949	Endosulfan I	14.6	Spike	P	0 - 30
2018949	Endosulfan II	0.391	Spike	P	0 - 30
2018949	Endosulfan Sulfate	6.73	Spike	P	0 - 30
2018949	Endrin	14.3	Spike	P	0 - 30
2018949	Endrin Aldehyde	21.2	Spike	P	0 - 30
2018949	Endrin Ketone	13.2	Spike	P	0 - 30
2018949	Gamma-BHC	13.4	Spike	P	0 - 30
2018949	Gamma-Chlordane	16.0	Spike	P	0 - 30
2018949	Heptachlor	15.5	Spike	P	0 - 30
2018949	Heptachlor Epoxide	11.2	Spike	P	0 - 30
2018949	Methoxychlor	8.66	Spike	P	0 - 30
2018949	Mirex	22.9	Spike	P	0 - 30
2018949	Permethrin	19.1	Spike	P	0 - 30
2018949	Trifluralin	15.9	Spike	P	0 - 30
LFB	Aldrin	15.4	LCS	P	0 - 30
LFB	Alpha-BHC	15.1	LCS	P	0 - 30
LFB	Alpha-Chlordane	10.0	LCS	P	0 - 30
LFB	Beta-BHC	8.88	LCS	P	0 - 30
LFB	Carbophenothion	25.1	LCS	P	0 - 30
LFB	Chlorothalonil	5.90	LCS	P	0 - 30
LFB	Cypermethrin	11.0	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P350656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	DDD-p,p'	6.14	LCS	P	0 - 30
LFB	DDE-p,p'	11.2	LCS	P	0 - 30
LFB	DDT-p,p'	8.76	LCS	P	0 - 30
LFB	Delta-BHC	4.04	LCS	P	0 - 30
LFB	Dicofol	4.25	LCS	P	0 - 30
LFB	Dieldrin	8.14	LCS	P	0 - 30
LFB	Endosulfan I	7.22	LCS	P	0 - 30
LFB	Endosulfan II	13.4	LCS	P	0 - 30
LFB	Endosulfan Sulfate	0.183	LCS	P	0 - 30
LFB	Endrin	6.13	LCS	P	0 - 30
LFB	Endrin Aldehyde	23.1	LCS	P	0 - 30
LFB	Endrin Ketone	0.862	LCS	P	0 - 30
LFB	Gamma-BHC	8.88	LCS	P	0 - 30
LFB	Gamma-Chlordane	10.4	LCS	P	0 - 30
LFB	Heptachlor	11.9	LCS	P	0 - 30
LFB	Heptachlor Epoxide	9.46	LCS	P	0 - 30
LFB	Methoxychlor	12.4	LCS	P	0 - 30
LFB	Mirex	7.16	LCS	P	0 - 30
LFB	Permethrin	9.42	LCS	P	0 - 30
LFB	Trifluralin	8.05	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P351047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Chlordane	9.34	LCS	P	0 - 30
LFB	Toxaphene	10.5	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P350504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019172	Acesulfame K	23.4	Spike	P	0 - 30
2019172	AMPA	1.04	Spike	P	0 - 30
2019172	Endothall	8.34	Spike	P	0 - 30
2019172	Glufosinate	5.80	Spike	P	0 - 30
2019172	Glyphosate	1.33	Spike	P	0 - 30
2019172	Sucralose	2.64	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P350552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019526	3-Hydroxycarbofuran	0.423	Spike	P	0 - 30
2019526	Aldicarb	2.94	Spike	P	0 - 30
2019526	Aldicarb Sulfone	0.455	Spike	P	0 - 30
2019526	Aldicarb Sulfoxide	2.62	Spike	P	0 - 30
2019526	Carbaryl	0.180	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P350552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019526	Carbofuran	3.27	Spike	P	0 - 30
2019526	Methiocarb	0.484	Spike	P	0 - 30
2019526	Methomyl	9.42	Spike	P	0 - 30
2019526	Oxamyl	0.290	Spike	P	0 - 30
2019526	Propoxur	5.08	Spike	P	0 - 30
2019699	2,4-D	16.2	Spike	P	0 - 30
2019699	Acetaminophen	2.32	Spike	P	0 - 30
2019699	Bentazon	12.0	Spike	P	0 - 30
2019699	Carbamazepine	1.29	Spike	P	0 - 30
2019699	Diuron	0.587	Spike	P	0 - 30
2019699	Fenuron	1.09	Spike	P	0 - 30
2019699	Fluridone	1.59	Spike	P	0 - 30
2019699	Hydrocodone	4.54	Spike	P	0 - 30
2019699	Ibuprofen	4.93	Spike	P	0 - 30
2019699	Imazapyr	5.71	Spike	P	0 - 30
2019699	Imidacloprid	1.75	Spike	P	0 - 30
2019699	Linuron	4.50	Spike	P	0 - 30
2019699	MCPP	5.31	Spike	P	0 - 30
2019699	Naproxen	4.41	Spike	P	0 - 30
2019699	Primidone	0.918	Spike	P	0 - 30
2019699	Pyraclostrobin	3.38	Spike	P	0 - 30
2019699	Triclopyr	0.0605	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P350677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019392	Color (true)	2.17	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P350902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019112	Total Alkalinity	0.187	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P350903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019401	Total Alkalinity	0.264	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019392	TDS	1.76	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P350904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019112	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019401	Fluoride	0.986	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P351054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019484	Fluoride	0.516	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018533	Organic Carbon	0.459	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P350876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019393	Organic Carbon	0.111	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: 2019526

Field Sample ID: G4SENNR3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbaryl-d7	43.8	P	30 - 160

Lab Sample ID: 2019527

Field Sample ID: G4SENNR3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	118	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.5	P	30 - 160
EPA 8321B	Diuron-d6	63.0	P	30 - 160
EPA 8321B	Endothall-d6	130	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	69.8	P	30 - 160
EPA 8321B	Primidone-d5	66.7	P	30 - 160
EPA 8321B	Sucralose-d6	73.7	P	40 - 160

Lab Sample ID: 2019528

Field Sample ID: G4SENNR3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	58.5	P	37 - 117
EPA 8270D	Tetrachloro-m-xylene	41.2	P	34 - 101
EPA 8276	Decachlorobiphenyl	54.7	P	31 - 108
EPA 8276	PCNB	90.6	P	62 - 142

Lab Sample ID: 2019529

Field Sample ID: G4SENNR3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	94.5	P	71 - 126
EPA 8270D	Terbufos-d10	114	P	59 - 149

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A86089

Included Lab Sample IDs: 2019478, 2019481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115
Color (true)	98.5	99.7	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A86094

Included Lab Sample IDs: 2019527

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	142	88.1	P/P	60 - 160
Endothall	90.7	92.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86095

Included Lab Sample IDs: 2019527

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	82.1	93.0	P/P	60 - 160
Glufosinate	86.8	116	P/P	60 - 160
Glyphosate	88.3	116	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86099

Included Lab Sample IDs: 2019471, 2019474, 2019477, 2019480, 2019483, 2019486

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.1	P/P	90 - 110
O-Phosphate-P	98.2	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86110

Included Lab Sample IDs: 2019527

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.8	90.1	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86111

Included Lab Sample IDs: 2019531, 2019532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	99.2	P/P	90 - 110
Iron	103	100	P/P	90 - 110
Magnesium	102	99.3	P/P	90 - 110
Potassium	101	98.0	P/P	90 - 110
Sodium	98.6	95.5	P/P	90 - 110
Zinc	95.1	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86127

Included Lab Sample IDs: 2019469, 2019472, 2019475, 2019478, 2019481, 2019484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A86134

Included Lab Sample IDs: 2019527

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.4	104	P/P	50 - 150
Bentazon	85.1	88.2	P/P	50 - 160
Ibuprofen	108	97.5	P/P	50 - 160
MCP	94.4	93.9	P/P	50 - 150
Naproxen	74.5	108	P/P	50 - 160
Triclopyr	96.4	91.5	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86147

Included Lab Sample IDs: 2019473, 2019479, 2019482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86149

Included Lab Sample IDs: 2019470

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

Reference Method: SM 5310 B-00

Run ID: A86150

Included Lab Sample IDs: 2019470, 2019476, 2019485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86155

Included Lab Sample IDs: 2019473, 2019479, 2019482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86157

Included Lab Sample IDs: 2019473, 2019479, 2019482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A86162

Included Lab Sample IDs: 2019473, 2019479, 2019482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.1	P/P	90 - 110
Organic Carbon	96.3	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86169

Included Lab Sample IDs: 2019476, 2019485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	98.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A86172

Included Lab Sample IDs: 2019469, 2019472, 2019475, 2019478, 2019481, 2019484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86172

Included Lab Sample IDs: 2019469, 2019472, 2019475, 2019478, 2019481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86173

Included Lab Sample IDs: 2019470, 2019476, 2019485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86185

Included Lab Sample IDs: 2019473, 2019479, 2019482

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

Reference Method: EPA 8270D

Run ID: A86186

Included Lab Sample IDs: 2019528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	93.5		P	80 - 120
Alpha-BHC	97.4		P	80 - 120
Alpha-Chlordane	96.5		P	80 - 120
Beta-BHC	112		P	80 - 120
Carbophenothion	91.1		P	80 - 120
Chlorothalonil	96.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A86186

Included Lab Sample IDs: 2019528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cypermethrin	95.6		P	80 - 120
DDD-p,p'	104		P	80 - 120
DDE-p,p'	95.4		P	80 - 120
DDT-p,p'	106		P	80 - 120
Delta-BHC	118		P	80 - 120
Dicofol	106		P	80 - 120
Dieldrin	95.6		P	80 - 120
Endosulfan I	93.1		P	80 - 120
Endosulfan II	96.2		P	80 - 120
Endosulfan Sulfate	111		P	80 - 120
Endrin	93.7		P	80 - 120
Endrin Aldehyde	103		P	80 - 120
Endrin Ketone	104		P	80 - 120
Gamma-BHC	112		P	80 - 120
Gamma-Chlordane	96.0		P	80 - 120
Heptachlor	93.0		P	80 - 120
Heptachlor Epoxide	97.5		P	80 - 120
Methoxychlor	105		P	80 - 120
Mirex	102		P	80 - 120
Permethrin	99.6		P	80 - 120
Trifluralin	93.1		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86193

Included Lab Sample IDs: 2019530, 2019533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	95.1	95.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86194

Included Lab Sample IDs: 2019478, 2019481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Chloride	103	104	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86195

Included Lab Sample IDs: 2019526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
3-Hydroxycarbofuran	115	113	P/P	60 - 150
Acetaminophen	124	118	P/P	60 - 150
Aldicarb	107	112	P/P	60 - 150
Aldicarb Sulfone	107	103	P/P	50 - 150
Aldicarb Sulfoxide	111	107	P/P	50 - 150
Carbamazepine	100	96.0	P/P	60 - 150
Carbaryl	101	103	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86195

Included Lab Sample IDs: 2019526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbofuran	139	140	P/P	50 - 150
Diuron	120	118	P/P	60 - 150
Fenuron	105	107	P/P	60 - 150
Fluridone	107	110	P/P	60 - 160
Hydrocodone	111	115	P/P	60 - 150
Imazapyr	100	107	P/P	50 - 150
Imidacloprid	109	108	P/P	60 - 150
Linuron	102	106	P/P	60 - 150
Methiocarb	111	106	P/P	50 - 150
Methomyl	102	108	P/P	50 - 150
Oxamyl	113	107	P/P	50 - 150
Primidone	113	123	P/P	60 - 150
Propoxur	136	135	P/P	50 - 150
Pyraclostrobin	95.4	94.3	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86223

Included Lab Sample IDs: 2019531, 2019532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.9	96.4	P/P	90 - 110
Cadmium	94.6	96.6	P/P	90 - 110
Chromium	92.6	94.1	P/P	90 - 110
Copper	93.3	93.0	P/P	90 - 110
Lead	101	103	P/P	90 - 110
Nickel	94.0	93.6	P/P	90 - 110
Silver	94.2	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86236

Included Lab Sample IDs: 2019470, 2019476, 2019485

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

Reference Method: SM 4500 F-C-97

Run ID: A86252

Included Lab Sample IDs: 2019484

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

Reference Method: EPA 8270D

Run ID: A86292

Included Lab Sample IDs: 2019529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.9		P	80 - 120
Alachlor	97.7		P	80 - 120
Ametryn	96.8		P	80 - 120
Atrazine	96.4		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A86292
Included Lab Sample IDs: 2019529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Atrazine Desethyl	97.6		P	80 - 120
Azinphos Methyl	99.9		P	80 - 120
Bromacil	96.3		P	80 - 120
Butylate	99.3		P	80 - 120
Chlorpyrifos Ethyl	97.8		P	80 - 120
Chlorpyrifos Methyl	97.4		P	80 - 120
Cyanazine	90.6		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	97.9		P	80 - 120
Disulfoton	95.8		P	80 - 120
EPTC	96.2		P	80 - 120
Ethion	95.7		P	80 - 120
Ethoprop	102		P	80 - 120
Fenamiphos	93.3		P	80 - 120
Fipronil	93.9		P	80 - 120
Fipronil Sulfide	94.2		P	80 - 120
Fipronil Sulfone	94.2		P	80 - 120
Fonofos	95.3		P	80 - 120
Hexazinone	96.9		P	80 - 120
Malathion	99.6		P	80 - 120
Metalaxyl	99.3		P	80 - 120
Metolachlor	102		P	80 - 120
Metribuzin	102		P	80 - 120
Mevinphos	94.1		P	80 - 120
Molinate	93.9		P	80 - 120
Norflurazon	94.1		P	80 - 120
Parathion Ethyl	91.5		P	80 - 120
Parathion Methyl	96.0		P	80 - 120
Pendimethalin	98.6		P	80 - 120
Phorate	96.6		P	80 - 120
Prometon	96.0		P	80 - 120
Prometryn	95.7		P	80 - 120
Simazine	95.4		P	80 - 120
Terbufos	97.2		P	80 - 120
Terbuthylazine	97.6		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86297
Included Lab Sample IDs: 2019470, 2019476, 2019485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A86304
Included Lab Sample IDs: 2019530, 2019533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.2	97.1	P/P	90 - 110
Cadmium	96.0	94.7	P/P	90 - 110
Copper	96.5	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86304

Included Lab Sample IDs: 2019530, 2019533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	103	100	P/P	90 - 110
Nickel	97.0	93.7	P/P	90 - 110
Silver	104	102	P/P	90 - 110
Zinc	98.4	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86331

Included Lab Sample IDs: 2019530, 2019533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	103	96.9	P/P	90 - 110
Lead	104	98.4	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A86369

Included Lab Sample IDs: 2019528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	94.4		P	80 - 120
Toxaphene	105		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							8.05	
EPA 200.7 Rev. 4.4	Calcium	107		108	109	105			1.41
	Iron	105		106	107	104			1.41
	Iron	102		101	103				1.64
	Magnesium	108		109	110	103			0.918
	Potassium	102		107	107	100			0.732
	Sodium	101		102	102	97.9			0.0594
	Zinc	102		102	104	102			2.00
EPA 200.8 Rev. 5.4	Arsenic	102		102	100	105			1.96
	Arsenic	101		108	109				0.735
	Cadmium	104		103	101	103			2.05
	Cadmium	102		98.7	95.2				3.65
	Chromium	98.9		97.3	97.7	98.2			0.403
	Chromium	109		91.5	91.2				0.349
	Copper	97.6		98.8	96.9	97.0			1.97
	Copper	97.7		93.1	94.5				1.14
	Lead	102		102	99.3	103			2.82
	Lead	99.2		109	110				1.13
	Nickel	101		99.9	98.2	99.3			1.74
	Nickel	99.4		93.9	94.0				0.170
	Silver	99.5		99.0	98.0	99.4			1.02
	Silver	105		96.8	97.5				0.732
	Zinc	101		91.8	92.0				0.222
EPA 300.0 Rev. 2.1	Chloride	105		101	100			0.922	
	Sulfate	104		98.6	102			0.483	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1		95.6	98.5				1.70
	Ammonia-N	96.7		100	99.0				0.973
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		104	109				3.54
	Kjeldahl Nitrogen	104		105	106				0.555
	Kjeldahl Nitrogen	101		98.6	101				1.57
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5		97.0	99.0				1.03
	NO2NO3-N	97.5		91.5	92.0				0.545
EPA 365.1 Rev. 2.0	Total-P	98.3		96.4	94.8				1.62
	Total-P	98.4		88.7	94.2				5.95
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6		96.6	96.1				0.341
	O-Phosphate-P	98.8		98.2	97.1				1.13
EPA 8270D	Acetochlor	108	106	105	106		1.33		0.802
	Alachlor	108	106	108	105		1.58		2.64
	Aldrin	76.9	65.9	68.1	58.1		15.4		15.8
	Alpha-BHC	94.8	81.5	95.3	73.0		15.1		26.5
	Alpha-Chlordane	94.2	85.2	90.3	78.8		10.0		13.5
	Ametryn	109	110	112	98.0		0.531		12.9
	Atrazine	110	109	111	110		1.19		0.292
	Atrazine Desethyl	107	74.0	73.6	74.9		36.4		1.83
	Azinphos Methyl	129	120	116	115		7.24		0.996
	Beta-BHC	115	105	120	105		8.88		13.4
	Bromacil	95.9	96.0	95.6	97.4		0.0381		1.80
	Butylate	76.1	82.3	56.1	80.1		7.89		35.3
	Carbophenothion	69.8	89.9	93.3	101		25.1		8.30
	Chlorothalonil	90.1	85.0	125	78.4		5.90		45.4
	Chlorpyrifos Ethyl	102	107	109	111		4.76		2.08
	Chlorpyrifos Methyl	103	101	104	101		1.83		2.87
	Cyanazine	189	123	134	155		42.7		14.7
	Cypermethrin	96.9	86.8	110	86.6		11.0		24.2

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	DDD-p,p'	116	109	112	99.8	6.14	11.3
	DDE-p,p'	93.8	83.9	85.9	74.5	11.2	14.2
	DDT-p,p'	102	93.2	96.9	86.2	8.76	11.7
	Delta-BHC	118	114	229	204	4.04	11.6
	Demeton	87.8	88.8	73.9	80.6	1.15	8.71
	Diazinon	113	111	109	105	2.24	3.87
	Dicofol	95.3	91.3	118	114	4.25	3.40
	Dieldrin	98.6	90.9	98.0	88.6	8.14	10.0
	Disulfoton	98.4	91.1	88.1	90.2	7.70	2.28
	Endosulfan I	98.9	92.0	111	96.0	7.22	14.6
	Endosulfan II	112	97.5	115	116	13.4	0.391
	Endosulfan Sulfate	115	116	123	115	0.183	6.73
	Endrin	102	95.7	106	91.6	6.13	14.3
	Endrin Aldehyde	88.3	111	114	92.3	23.1	21.2
	Endrin Ketone	113	114	139	122	0.862	13.2
	EPTC	78.2	82.0	69.9	52.5	4.71	28.4
	Ethion	107	110	114	115	2.73	1.45
	Ethoprop	102	102	93.5	90.5	0.348	3.18
	Fenamiphos	104	103	114	113	1.04	1.11
	Fipronil	104	108	106	109	4.14	2.36
	Fipronil Sulfide	95.0	102	105	109	7.60	3.48
	Fipronil Sulfone	88.6	101	99.0	108	12.7	8.22
	Fonofos	100	95.2	92.3	92.5	4.93	0.276
	Gamma-BHC	115	105	120	105	8.88	13.4
	Gamma-Chlordane	91.8	82.8	88.1	75.0	10.4	16.0
	Heptachlor	79.0	70.2	75.9	65.0	11.9	15.5
	Heptachlor Epoxide	98.7	89.8	96.6	86.4	9.46	11.2
	Hexazinone	106	108	113	109	1.80	3.38
	Malathion	111	117	119	119	4.51	0.231
	Metalaxyl	108	92.5	100	103	15.2	2.15
	Methoxychlor	116	103	117	108	12.4	8.66
	Metolachlor	110	112	109	111	1.93	1.85
	Metribuzin	152	113	119	118	29.8	0.857
	Mevinphos	97.8	84.7	80.9	74.5	14.3	8.35
	Mirex	82.3	76.6	78.0	62.0	7.16	22.9
	Molinate	79.2	85.0	72.5	62.3	7.02	15.2
	Norflurazon	95.6	103	99.7	102	7.28	2.60
	Parathion Ethyl	103	103	104	104	0.191	0.0953
	Parathion Methyl	107	102	104	102	4.51	2.05
	Pendimethalin	123	127	125	124	3.67	1.12
	Permethrin	95.9	87.2	99.7	82.4	9.42	19.1
	Phorate	92.8	87.1	81.8	81.2	6.35	0.716
	Prometon	104	99.9	106	103	4.41	2.30
	Prometryn	104	104	104	106	0.339	1.27
	Simazine	109	108	105	106	0.826	1.26
	Terbufos	103	96.8	94.1	95.9	6.32	1.97
	Terbutylazine	107	109	109	110	1.72	1.04
	Trifluralin	83.4	77.0	86.6	73.8	8.05	15.9
EPA 8276	Chlordane	84.9	77.3	50.5		9.34	
	Toxaphene	71.0	63.9	59.4		10.5	
EPA 8321B	2,4-D	86.0		180	141		16.2
	3-Hydroxycarbofuran	93.6		62.0	62.3		0.423
	Acesulfame K	77.2		26.4	20.8		23.4
	Acetaminophen	113		135	138		2.32

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Aldicarb	74.6	48.0	49.5			2.94
	Aldicarb Sulfone	102	74.0	73.6			0.455
	Aldicarb Sulfoxide	99.7	31.5	32.3			2.62
	AMPA	147	101	99.7			1.04
	Bentazon	124	99.7	87.8			12.0
	Carbamazepine	73.5	56.2	56.9			1.29
	Carbaryl	56.4	41.3	41.3			0.180
	Carbofuran	74.2	48.1	46.6			3.27
	Diuron	79.4	64.4	64.8			0.587
	Endothall	86.9	128	139			8.34
	Fenuron	104	75.4	76.2			1.09
	Fluridone	70.9	58.9	57.5			1.59
	Glufosinate	112	105	112			5.80
	Glyphosate	98.5	67.1	66.2			1.33
	Hydrocodone	95.7	84.2	80.4			4.54
	Ibuprofen	99.1	96.9	92.2			4.93
	Imazapyr	89.1	100	91.1			5.71
	Imidacloprid	104	158	156			1.75
	Linuron	58.1	54.8	57.3			4.50
	MCPP	99.3	162	170			5.31
	Methiocarb	54.6	44.4	44.6			0.484
	Methomyl	91.1	65.3	59.4			9.42
	Naproxen	82.8	109	104			4.41
	Oxamyl	106	71.0	71.2			0.290
	Primidone	102	91.9	91.1			0.918
	Propoxur	78.9	46.8	44.4			5.08
	Pyraclostrobin	61.7	71.0	68.6			3.38
	Sucralose	89.4	103	106			2.64
	Triclopyr	104	182	182			0.0605
SM 2120 B	Color (true)	98.3				2.17	
	Color (true)	101					
SM 2320 B-97	Total Alkalinity	104				0.187	
	Total Alkalinity	102				0.264	
SM 2540 C-97	TDS					1.76	
SM 4500 F-C-97	Fluoride	96.6	98.4	98.4			0.0
	Fluoride	97.6	96.5	97.9			0.986
	Fluoride	98.7	96.1	96.9			0.516
SM 5310 B-00	Organic Carbon	98.4	97.3	97.9			0.459
	Organic Carbon	96.4	99.6	99.4			0.111

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2019530, 2019531, 2019532, 2019533
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2019530, 2019531, 2019532, 2019533
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2019478, 2019481
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2019478, 2019481

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2019470, 2019473, 2019476, 2019479, 2019482, 2019485
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2019470, 2019473, 2019476, 2019479, 2019482, 2019485
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2019470, 2019473, 2019476, 2019479, 2019482, 2019485
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2019470, 2019473, 2019476, 2019479, 2019482, 2019485
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2019471, 2019474, 2019477, 2019480, 2019483, 2019486
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	2019528
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	2019529
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2019528
EPA 8321B / E31780	Carbamates in water matrices by HPLC/MS/MS	2019526
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2019527
SM 2120 B / E31780	True Color measured at 450 nm	2019478, 2019481
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2019478, 2019481
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2019470, 2019473, 2019476, 2019479, 2019482, 2019485

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	08/23/2018			08/23/2018 17:10	Megan Treadwell	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
EPA 200.7 Rev. 4.4	08/23/2018	08/23/2018 17:30	Elliott D. Healy	08/24/2018 15:22	Betina Topolski	2019531
	08/23/2018	08/23/2018 17:30	Elliott D. Healy	08/24/2018 15:29	Betina Topolski	2019532
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	08/29/2018 16:24	Martin Acosta	2019530
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	08/29/2018 16:39	Martin Acosta	2019533
EPA 200.8 Rev. 5.4	08/23/2018	08/23/2018 17:30	Elliott D. Healy	08/30/2018 23:12	Allison Taylor	2019531
	08/23/2018	08/23/2018 17:30	Elliott D. Healy	08/30/2018 23:22	Allison Taylor	2019532
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	09/05/2018 17:10	Robert K Palmer	2019530
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	09/05/2018 17:39	Robert K Palmer	2019533
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	09/06/2018 16:17	Robert K Palmer	2019530
	08/23/2018	08/28/2018 17:10	Elliott D. Healy	09/06/2018 16:37	Robert K Palmer	2019533
EPA 300.0 Rev. 2.1	08/23/2018			08/30/2018 16:19	Lipi Saha	2019478
	08/23/2018			08/30/2018 16:55	Lipi Saha	2019481
EPA 350.1 Rev. 2.0	08/23/2018			08/28/2018 13:00	Ping Hua	2019485
	08/23/2018			08/28/2018 13:04	Ping Hua	2019470
	08/23/2018			08/28/2018 13:06	Ping Hua	2019476
	08/23/2018			08/29/2018 12:13	Ping Hua	2019473
	08/23/2018			08/29/2018 12:15	Ping Hua	2019479
	08/23/2018			08/29/2018 12:16	Ping Hua	2019482
EPA 351.2 Rev. 2.0	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 12:05	Joseph Suarez	2019470
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 15:41	Joseph Suarez	2019473
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 15:42	Joseph Suarez	2019479
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 15:44	Joseph Suarez	2019482
	08/23/2018	08/28/2018 11:00	Adrian Shelby	08/29/2018 10:20	Joseph Suarez	2019476
	08/23/2018	08/28/2018 11:00	Adrian Shelby	08/29/2018 10:22	Joseph Suarez	2019485
EPA 353.2 Rev. 2.0	08/23/2018			08/28/2018 12:55	Lauren Bottorf	2019473
	08/23/2018			08/28/2018 12:56	Lauren Bottorf	2019479
	08/23/2018			08/28/2018 12:57	Lauren Bottorf	2019482
	08/23/2018			09/05/2018 14:39	Lauren Bottorf	2019470
	08/23/2018			09/05/2018 14:40	Lauren Bottorf	2019476
	08/23/2018			09/05/2018 14:42	Lauren Bottorf	2019485
EPA 365.1 Rev. 2.0	08/23/2018	08/27/2018 12:15	Sima Feizi	08/28/2018 12:38	Beverly Y. Sanders	2019473
	08/23/2018	08/27/2018 12:15	Sima Feizi	08/28/2018 12:39	Beverly Y. Sanders	2019479
	08/23/2018	08/27/2018 12:15	Sima Feizi	08/28/2018 12:40	Beverly Y. Sanders	2019482
	08/23/2018	08/28/2018 15:06	Sima Feizi	08/29/2018 12:13	Beverly Y. Sanders	2019470
	08/23/2018	08/28/2018 15:06	Sima Feizi	08/29/2018 12:14	Beverly Y. Sanders	2019476
	08/23/2018	08/28/2018 15:06	Sima Feizi	08/29/2018 12:15	Beverly Y. Sanders	2019485
EPA 365.1 Rev. 2.0 dissolved	08/23/2018			08/23/2018 14:34	Julia Storbeck	2019474
	08/23/2018			08/23/2018 14:35	Julia Storbeck	2019480

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	08/23/2018			08/23/2018 14:36	Julia Storbeck	2019483
	08/23/2018			08/23/2018 14:47	Julia Storbeck	2019471
	08/23/2018			08/23/2018 14:48	Julia Storbeck	2019477
	08/23/2018			08/23/2018 14:49	Julia Storbeck	2019486
EPA 8270D	08/23/2018	08/24/2018 08:00	Fe-Val Siddell	08/27/2018 16:58	Marek Topolski	2019529
	08/23/2018	08/27/2018 09:31	Rasheda Ghaffari	08/28/2018 19:35	Dinesh Mishra	2019528
EPA 8276	08/23/2018	09/04/2018 03:30	Rasheda Ghaffari	09/08/2018 06:55	Arthur Maknenko	2019528
EPA 8321B	08/23/2018	08/23/2018 12:45	Mohammad Ghaffari	08/23/2018 16:47	Mohammad Ghaffari	2019527
	08/23/2018	08/23/2018 12:45	Mohammad Ghaffari	08/23/2018 22:10	Mohammad Ghaffari	2019527
	08/23/2018	08/23/2018 12:45	Mohammad Ghaffari	08/24/2018 14:03	Mohammad Ghaffari	2019527
	08/23/2018	08/23/2018 13:00	Hoor Shaik	08/26/2018 04:55	Juyoung Kim	2019526
	08/23/2018	08/23/2018 13:00	Hoor Shaik	08/26/2018 10:49	Juyoung Kim	2019527
	08/23/2018	08/23/2018 13:00	Hoor Shaik	08/26/2018 17:02	Juyoung Kim	2019527
SM 2120 B	08/23/2018			08/23/2018 15:55	William L. Brown IV	2019481
	08/23/2018			08/23/2018 16:13	William L. Brown IV	2019478
SM 2320 B-97	08/23/2018			08/28/2018 21:21	Dale L. Simmons	2019472
	08/23/2018			08/28/2018 21:31	Dale L. Simmons	2019478
	08/23/2018			08/28/2018 21:42	Dale L. Simmons	2019481
	08/23/2018			08/29/2018 02:07	Dale L. Simmons	2019469
	08/23/2018			08/29/2018 02:17	Dale L. Simmons	2019475
	08/23/2018			08/29/2018 02:27	Dale L. Simmons	2019484
SM 2540 C-97	08/23/2018			08/28/2018 15:02	Yijie Li	2019478, 2019481
SM 2540 D-97	08/23/2018			08/28/2018 15:02	Yijie Li	2019469, 2019472, 2019475, 2019478, 2019481, 2019484
SM 4500 F-C-97	08/23/2018			08/28/2018 21:21	Dale L. Simmons	2019472
	08/23/2018			08/28/2018 21:31	Dale L. Simmons	2019478
	08/23/2018			08/28/2018 21:42	Dale L. Simmons	2019481
	08/23/2018			08/29/2018 00:06	Dale L. Simmons	2019469
	08/23/2018			08/29/2018 00:10	Dale L. Simmons	2019475
	08/23/2018			08/31/2018 12:02	Dale L. Simmons	2019484
SM 5310 B-00	08/23/2018			08/28/2018 09:24	Megan Treadwell	2019470
	08/23/2018			08/28/2018 09:37	Megan Treadwell	2019476
	08/23/2018			08/28/2018 09:50	Megan Treadwell	2019485
	08/23/2018			08/28/2018 18:11	Megan Treadwell	2019479
	08/23/2018			08/28/2018 20:38	Megan Treadwell	2019473
	08/23/2018			08/28/2018 20:52	Megan Treadwell	2019482