

Chemical Analysis Report

CEN-DIST-2017-04-11-02

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

Event Description: **Lorraine/ Silver/ Apopka-Beau**
Request ID: **RQ-2017-03-20-52**
Customer: **CEN-DIST**
Project ID: **SMP**

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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 ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887271	EPA 8321B	Glyphosate**	10	U	ug/L	P323390	
		Sucralose**	0.12		ug/L	P323079	
	USGS O-2060-01	2,4-D	0.015	I	ug/L	P323095	
		Diuron	0.0080	U	ug/L	P323371	MS
		Fenuron	0.016	U	ug/L	P323371	
		Imidacloprid	0.0080	U	ug/L	P323371	
		Bentazon	0.088		ug/L	P323095	
		Linuron	0.0080	U	ug/L	P323371	
		Acetaminophen**	0.010	U	ug/L	P323095	
		MCP	0.0040	U	ug/L	P323095	

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887271	USGS O-2060-01	Carbamazepine**	4.0E-04	U	ug/L	P323095	
		Triclopyr**	0.11		ug/L	P323095	
		Primidone**	0.0080	U	ug/L	P323095	
		Fluridone**	8.0E-04	U	ug/L	P323371	
1887272	EPA 8321B	Pyraclostrobin**	0.0020	U	ug/L	P323413	
1887276	EPA 8270D	Aldrin	4.2	UJ	ng/L	P323096	LCS
		Alpha-BHC	2.1	U	ng/L	P323096	
		Beta-BHC	4.2	U	ng/L	P323096	
		Delta-BHC	4.2	U	ng/L	P323096	
		Gamma-BHC	4.2	UJ	ng/L	P323096	RPD
		Carbophenothion	4.2	UJ	ng/L	P323096	RPD
		Chlorothalonil	2.1	U	ng/L	P323096	
		Cypermethrin	21	U	ng/L	P323096	
		DDD-p,p'	2.1	U	ng/L	P323096	
		DDE-p,p'	3.2	U	ng/L	P323096	
		DDT-p,p'	3.2	U	ng/L	P323096	
		Dieldrin	4.2	U	ng/L	P323096	
		Endosulfan I	4.2	U	ng/L	P323096	
		Endosulfan II	4.2	U	ng/L	P323096	
		Endosulfan Sulfate	2.1	U	ng/L	P323096	
		Endrin	2.1	U	ng/L	P323096	
		Endrin Aldehyde	2.1	U	ng/L	P323096	
		Heptachlor	1.6	UJ	ng/L	P323096	CCV
		Heptachlor Epoxide	2.1	U	ng/L	P323096	
		Methoxychlor	4.2	U	ng/L	P323096	
		Mirex	2.1	U	ng/L	P323096	
		Permethrin	11	U	ng/L	P323096	
		Trifluralin	1.1	U	ng/L	P323096	
		Alpha-Chlordane	1.1	UJ	ng/L	P323096	MS, RPD
		Gamma-Chlordane	1.1	UJ	ng/L	P323096	MS, RPD
		Endrin Ketone	2.1	U	ng/L	P323096	
		Dicofol	32	U	ng/L	P323096	
1887277		Ametryn	0.32	UJ	ng/L	P323477	MS
		Atrazine	26		ng/L	P323477	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P323477	
		Chlorpyrifos Methyl	0.097	U	ng/L	P323477	
		Disulfoton	0.32	U	ng/L	P323477	
		Ethion	0.15	U	ng/L	P323477	
		Ethoprop	0.097	U	ng/L	P323477	
		Hexazinone	0.49	U	ng/L	P323477	
		Malathion	0.34	U	ng/L	P323477	
		Metribuzin	0.19	UJ	ng/L	P323477	MS
		Mevinphos	0.49	U	ng/L	P323477	
		Norflurazon	0.49	U	ng/L	P323477	
		Phorate	0.24	U	ng/L	P323477	

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887277	EPA 8270D	Prometryn	0.19	UJ	ng/L	P323477	MS
		Simazine	0.49	U	ng/L	P323477	
		Atrazine Desethyl	1.2	T	ng/L	P323477	
		Prometon	0.87	U	ng/L	P323477	
		Fipronil	0.24	U	ng/L	P323477	
		Molinate	0.29	U	ng/L	P323477	
		Pendimethalin	1.5	U	ng/L	P323477	
		Terbufos	0.097	U	ng/L	P323477	
		EPTC	1.2	U	ng/L	P323477	
		Terbutylazine	0.41	U	ng/L	P323477	
		Bromacil	0.49	U	ng/L	P323477	
		Fipronil Sulfide	0.15	U	ng/L	P323477	
		Fipronil Sulfone	0.15	UJ	ng/L	P323477	RPD
		Alachlor	0.24	U	ng/L	P323477	
		Azinphos Methyl	2.2	UJ	ng/L	P323477	MS
		Butylate	0.39	U	ng/L	P323477	
		Demeton	1.9	U	ng/L	P323477	
		Diazinon	0.12	U	ng/L	P323477	
		Fenamiphos	0.24	U	ng/L	P323477	
		Fonofos	0.19	U	ng/L	P323477	
		Metalaxyl	5.5	J	ng/L	P323477	MS
		Metolachlor	9.8	J	ng/L	P323477	MS
		Acetochlor	0.24	U	ng/L	P323477	
		Cyanazine	0.49	U	ng/L	P323477	
		Parathion Ethyl	0.24	U	ng/L	P323477	
		Parathion Methyl	0.24	U	ng/L	P323477	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: MDL's for some parameters elevated due to matrix interference.

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

EPA 8270D: Second LFB was partially lost during preparation and is not reported. MS accuracy for Atrazine not assessed due to high content of this parameter in the sample spiked. 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: P323149

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P323578

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323578

Component	Result	Code	Units
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323578

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 300.0 Rev. 2.1
Batch ID: P323484

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323489

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323130

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323211

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323318

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323254

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323106

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

Reference Method: EPA 8270D
Batch ID: P323096

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'	2.0	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 8270D
Batch ID: P323477

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	0.32	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P323477

Component	Result	Code	Units
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P323079

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P323390

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P323413

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: SM 2120 B
Batch ID: P323113

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P323543

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

Reference Method: SM 2540 C-97
Batch ID: P323652

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P323883

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323329

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

Reference Method: USGS O-2060-01
Batch ID: P323095

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
MCP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P323371

Component	Result	Code	Units
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	103		P	85 - 115
Sodium	104		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	92.8		P	85 - 115
Cadmium	94.4		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	91.0		P	85 - 115
Lead	96.1		P	85 - 115
Nickel	91.9		P	85 - 115
Silver	96.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323484

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323489

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323130

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323318

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P323254

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P323106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.0		P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P323096

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	79.9	83.3	P/F	30 - 83.0
Alpha-BHC	88.8	90.1	P/P	62 - 119
Alpha-Chlordane	97.8	89.7	P/P	56 - 119
Beta-BHC	111	110	P/P	54 - 141
Carbophenothion	99.9	112	P/P	33 - 147
Chlorothalonil	76.6	85.6	P/P	25 - 175
Cypermethrin	94.6	95.5	P/P	50 - 155
DDD-p,p'	107	101	P/P	56 - 135
DDE-p,p'	93.3	88.4	P/P	48 - 120
DDT-p,p'	98.2	103	P/P	51 - 121
Delta-BHC	121	116	P/P	65 - 163
Dicofol	50.6	45.3	P/P	15 - 112
Dieldrin	102	91.7	P/P	59 - 134
Endosulfan I	101	99.9	P/P	65 - 142
Endosulfan II	106	109	P/P	65 - 154
Endosulfan Sulfate	104	101	P/P	65 - 136
Endrin	107	100	P/P	53 - 156
Endrin Aldehyde	92.2	95.5	P/P	47 - 156
Endrin Ketone	95.8	101	P/P	70 - 124
Gamma-BHC	106	107	P/P	64 - 142
Gamma-Chlordane	97.8	89.7	P/P	55 - 114
Heptachlor	80.2	75.9	P/P	42 - 105
Heptachlor Epoxide	99.8	94.3	P/P	67 - 120
Methoxychlor	108	112	P/P	63 - 134
Mirex	87.1	89.6	P/P	40 - 90.0
Permethrin	98.6	95.6	P/P	36 - 144
Trifluralin	132	154	P/P	40 - 170

Reference Method: EPA 8270D
 Batch ID: P323477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	104		P	78 - 118
Alachlor	103		P	77 - 119
Ametryn	121		P	61 - 136
Atrazine	107		P	73 - 120
Atrazine Desethyl	91.6		P	16 - 122
Azinphos Methyl	121		P	69 - 186
Bromacil	91.7		P	40 - 125
Butylate	68.5		P	32 - 87.0

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P323477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorpyrifos Ethyl	106		P	53 - 110
Chlorpyrifos Methyl	104		P	31 - 119
Cyanazine	144		P	36 - 224
Demeton	118		P	39 - 122
Diazinon	107		P	75 - 119
Disulfoton	112		P	42 - 139
EPTC	66.8		P	33 - 96.0
Ethion	116		P	63 - 127
Ethoprop	103		P	65 - 107
Fenamiphos	134		P	64 - 137
Fipronil	115		P	60 - 126
Fipronil Sulfide	103		P	58 - 124
Fipronil Sulfone	102		P	57 - 126
Fonofos	97.8		P	65 - 111
Hexazinone	105		P	46 - 151
Malathion	115		P	68 - 132
Metalaxyl	103		P	51 - 132
Metolachlor	110		P	78 - 119
Metribuzin	128		P	64 - 138
Mevinphos	120		P	34 - 128
Molinate	79.3		P	44 - 101
Norflurazon	114		P	63 - 129
Parathion Ethyl	106		P	80 - 109
Parathion Methyl	102		P	74 - 125
Pendimethalin	103		P	48 - 134
Phorate	110		P	52 - 119
Prometon	113		P	69 - 124
Prometryn	119		P	66 - 124
Simazine	101		P	61 - 134
Terbufos	96.0		P	58 - 115
Terbutylazine	103		P	77 - 113

Reference Method: EPA 8321B
Batch ID: P323079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.1		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P323390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	96.2		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P323413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	100		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
 Batch ID: P323543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P324679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P323329

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

Reference Method: USGS O-2060-01
 Batch ID: P323095

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.6		P	40 - 140
Acetaminophen	110		P	40 - 140
Bentazon	106		P	40 - 140
Carbamazepine	99.6		P	40 - 140
MCP	100		P	40 - 140
Primidone	73.2		P	40 - 140
Triclopyr	84.4		P	40 - 140

Reference Method: USGS O-2060-01
 Batch ID: P323371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	62.4		P	40 - 140
Fenuron	86.4		P	40 - 140
Fluridone	83.2		P	40 - 140
Imidacloprid	70.8		P	40 - 160
Linuron	101		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P323578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887977	Calcium	108		P	80 - 120
1887977	Iron	106		P	80 - 120
1887977	Magnesium	107		P	80 - 120
1887977	Potassium	108		P	80 - 120
1887977	Sodium	104		P	80 - 120
1887977	Zinc	104		P	80 - 120
1888375	Calcium	103		P	80 - 120
1888375	Iron	104	106	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888375	Magnesium	102		P	80 - 120
1888375	Potassium	103	104	P/P	80 - 120
1888375	Sodium	101	104	P/P	80 - 120
1888375	Zinc	99.3	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887977	Arsenic	95.1		P	80 - 120
1887977	Cadmium	97.4		P	80 - 120
1887977	Chromium	104		P	80 - 120
1887977	Copper	95.9		P	80 - 120
1887977	Lead	98.4		P	80 - 120
1887977	Nickel	93.8		P	80 - 120
1887977	Silver	98.3		P	80 - 120
1888375	Arsenic	95.2	94.4	P/P	80 - 120
1888375	Cadmium	98.1	96.9	P/P	80 - 120
1888375	Chromium	101	101	P/P	80 - 120
1888375	Copper	89.5	90.2	P/P	80 - 120
1888375	Lead	96.8	96.8	P/P	80 - 120
1888375	Nickel	92.0	92.4	P/P	80 - 120
1888375	Silver	97.7	97.8	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887181	Sulfate	101		P	90 - 110
1887286	Sulfate	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887181	Chloride	103		P	90 - 110
1887286	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887107	Ammonia-N	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887139	Kjeldahl Nitrogen	98.3	97.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P323318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887260	NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P323254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887183	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P323106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887074	O-Phosphate-P	97.6	95.4	P/P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P323096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887276	Aldrin	46.0	58.0	P/P	30 - 83.0
1887276	Alpha-BHC	92.3	75.3	P/P	62 - 119
1887276	Alpha-Chlordane	52.8	78.0	F/P	56 - 119
1887276	Beta-BHC	84.9	78.4	P/P	54 - 141
1887276	Carbophenothion	88.8	127	P/P	33 - 147
1887276	Chlorothalonil	145	160	P/P	25 - 175
1887276	Cypermethrin	84.9	87.7	P/P	50 - 155
1887276	DDD-p,p'	72.8	84.5	P/P	56 - 135
1887276	DDE-p,p'	51.0	68.0	P/P	48 - 120
1887276	DDT-p,p'	65.4	67.2	P/P	51 - 121
1887276	Delta-BHC	110	111	P/P	65 - 163
1887276	Dicofol	18.7	24.4	P/P	15 - 112
1887276	Dieldrin	60.2	79.8	P/P	59 - 134
1887276	Endosulfan I	76.1	91.2	P/P	65 - 142
1887276	Endosulfan II	90.7	101	P/P	65 - 154
1887276	Endosulfan Sulfate	109	103	P/P	65 - 136
1887276	Endrin	73.5	86.7	P/P	53 - 156
1887276	Endrin Aldehyde	67.0	84.6	P/P	47 - 156
1887276	Endrin Ketone	115	93.7	P/P	70 - 124
1887276	Gamma-BHC	106	73.3	P/P	64 - 142
1887276	Gamma-Chlordane	52.8	78.0	F/P	55 - 114
1887276	Heptachlor	49.7	56.8	P/P	42 - 105
1887276	Heptachlor Epoxide	72.2	94.5	P/P	67 - 120
1887276	Methoxychlor	78.4	79.2	P/P	63 - 134
1887276	Mirex	58.0	66.4	P/P	40 - 90.0
1887276	Permethrin	81.2	87.1	P/P	36 - 144
1887276	Trifluralin	133	136	P/P	40 - 170

Reference Method: EPA 8270D
 Batch ID: P323477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887277	Acetochlor	109	109	P/P	74 - 123
1887277	Alachlor	95.5	106	P/P	73 - 124

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P323477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887277	Ametryn	162	160	F/F	56 - 149
1887277	Atrazine Desethyl	103	87.3	P/P	12 - 103
1887277	Azinphos Methyl	240	208	F/F	60 - 202
1887277	Bromacil	106	106	P/P	42 - 133
1887277	Butylate	33.2	36.3	P/P	10 - 85.0
1887277	Chlorpyrifos Ethyl	105	105	P/P	53 - 113
1887277	Chlorpyrifos Methyl	99.7	96.2	P/P	40 - 115
1887277	Cyanazine	148	120	P/P	22 - 210
1887277	Demeton	118	95.7	P/P	17 - 149
1887277	Diazinon	111	112	P/P	72 - 124
1887277	Disulfoton	100	102	P/P	43 - 139
1887277	EPTC	31.7	29.9	P/P	10 - 86.0
1887277	Ethion	116	111	P/P	65 - 131
1887277	Ethoprop	108	103	P/P	59 - 110
1887277	Fenamiphos	136	121	P/P	57 - 138
1887277	Fipronil	121	106	P/P	40 - 130
1887277	Fipronil Sulfide	113	95.8	P/P	36 - 128
1887277	Fipronil Sulfone	99.2	69.8	P/P	16 - 145
1887277	Fonofos	99.4	95.4	P/P	60 - 112
1887277	Hexazinone	110	110	P/P	69 - 142
1887277	Malathion	119	114	P/P	68 - 132
1887277	Metalaxyl	196	192	F/F	66 - 118
1887277	Metolachlor	216	211	F/F	71 - 124
1887277	Metribuzin	150	150	F/F	61 - 140
1887277	Mevinphos	98.4	96.4	P/P	38 - 130
1887277	Molinate	55.2	50.8	P/P	23 - 99.0
1887277	Norflurazon	108	94.8	P/P	39 - 139
1887277	Parathion Ethyl	109	110	P/P	75 - 111
1887277	Parathion Methyl	110	107	P/P	64 - 130
1887277	Pendimethalin	111	113	P/P	26 - 173
1887277	Phorate	94.4	99.5	P/P	43 - 127
1887277	Prometon	116	124	P/P	50 - 144
1887277	Prometryn	129	127	F/F	69 - 126
1887277	Simazine	137	135	P/P	51 - 152
1887277	Terbufos	101	96.0	P/P	54 - 125
1887277	Terbutylazine	109	110	P/P	76 - 113

Reference Method: EPA 8321B
Batch ID: P323079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887097	Sucralose	104	100	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P323390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887304	Glyphosate	101	103	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P323413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887272	Pyraclostrobin	92.0	98.8	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1891234	Fluoride	98.4	99.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887224	Organic Carbon	103	102	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P323095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887113	2,4-D	124	103	P/P	40 - 140
1887113	Acetaminophen	66.0	78.8	P/P	40 - 140
1887113	Carbamazepine	77.2	73.6	P/P	40 - 140
1887113	MCP	98.0	116	P/P	40 - 140
1887113	Primidone	63.6	59.2	P/P	40 - 140
1887113	Triclopyr	122	113	P/P	40 - 140

Reference Method: USGS O-2060-01
Batch ID: P323371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1888144	Diuron	31.1	33.4	F/F	40 - 140
1888144	Fenuron	40.4	41.2	P/P	40 - 140
1888144	Fluridone	46.0	48.4	P/P	40 - 140
1888144	Imidacloprid	82.9	78.9	P/P	40 - 160
1888144	Linuron	62.8	53.2	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887106	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888375	Calcium	1.60	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888375	Iron	1.91	Spike	P	0 - 20
1888375	Magnesium	2.02	Spike	P	0 - 20
1888375	Potassium	0.919	Spike	P	0 - 20
1888375	Sodium	1.63	Spike	P	0 - 20
1888375	Zinc	3.18	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888375	Arsenic	0.771	Spike	P	0 - 20
1888375	Cadmium	1.24	Spike	P	0 - 20
1888375	Chromium	0.513	Spike	P	0 - 20
1888375	Copper	0.821	Spike	P	0 - 20
1888375	Lead	0.0618	Spike	P	0 - 20
1888375	Nickel	0.464	Spike	P	0 - 20
1888375	Silver	0.0724	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887286	Sulfate	0.438	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887286	Chloride	0.286	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887107	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887139	Kjeldahl Nitrogen	0.907	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P323318

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887260	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P323254

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887183	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P323106

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887074	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: EPA 8270D

Batch ID: P323096

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887276	Aldrin	23.0	Spike	P	0 - 30
1887276	Alpha-BHC	20.3	Spike	P	0 - 30
1887276	Alpha-Chlordane	38.5	Spike	F	0 - 30
1887276	Beta-BHC	7.99	Spike	P	0 - 30
1887276	Carbophenothion	35.5	Spike	F	0 - 30
1887276	Chlorothalonil	9.80	Spike	P	0 - 30
1887276	Cypermethrin	3.18	Spike	P	0 - 30
1887276	DDD-p,p'	14.8	Spike	P	0 - 30
1887276	DDE-p,p'	28.7	Spike	P	0 - 30
1887276	DDT-p,p'	2.69	Spike	P	0 - 30
1887276	Delta-BHC	0.302	Spike	P	0 - 30
1887276	Dicofol	26.6	Spike	P	0 - 30
1887276	Dieldrin	28.0	Spike	P	0 - 30
1887276	Endosulfan I	18.1	Spike	P	0 - 30
1887276	Endosulfan II	11.2	Spike	P	0 - 30
1887276	Endosulfan Sulfate	6.40	Spike	P	0 - 30
1887276	Endrin	16.5	Spike	P	0 - 30
1887276	Endrin Aldehyde	23.3	Spike	P	0 - 30
1887276	Endrin Ketone	20.8	Spike	P	0 - 30
1887276	Gamma-BHC	36.9	Spike	F	0 - 30
1887276	Gamma-Chlordane	38.5	Spike	F	0 - 30
1887276	Heptachlor	13.4	Spike	P	0 - 30
1887276	Heptachlor Epoxide	26.8	Spike	P	0 - 30
1887276	Methoxychlor	1.07	Spike	P	0 - 30
1887276	Mirex	13.4	Spike	P	0 - 30
1887276	Permethrin	7.00	Spike	P	0 - 30
1887276	Trifluralin	1.76	Spike	P	0 - 30
LFB	Aldrin	4.13	LCS	P	0 - 30
LFB	Alpha-BHC	1.48	LCS	P	0 - 30
LFB	Alpha-Chlordane	8.60	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P323096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Beta-BHC	1.21	LCS	P	0 - 30
LFB	Carbophenothion	11.4	LCS	P	0 - 30
LFB	Chlorothalonil	11.1	LCS	P	0 - 30
LFB	Cypermethrin	0.946	LCS	P	0 - 30
LFB	DDD-p,p'	5.85	LCS	P	0 - 30
LFB	DDE-p,p'	5.32	LCS	P	0 - 30
LFB	DDT-p,p'	5.00	LCS	P	0 - 30
LFB	Delta-BHC	4.62	LCS	P	0 - 30
LFB	Dicofol	11.0	LCS	P	0 - 30
LFB	Dieldrin	10.2	LCS	P	0 - 30
LFB	Endosulfan I	0.856	LCS	P	0 - 30
LFB	Endosulfan II	2.89	LCS	P	0 - 30
LFB	Endosulfan Sulfate	3.20	LCS	P	0 - 30
LFB	Endrin	6.91	LCS	P	0 - 30
LFB	Endrin Aldehyde	3.54	LCS	P	0 - 30
LFB	Endrin Ketone	4.94	LCS	P	0 - 30
LFB	Gamma-BHC	1.07	LCS	P	0 - 30
LFB	Gamma-Chlordane	8.60	LCS	P	0 - 30
LFB	Heptachlor	5.47	LCS	P	0 - 30
LFB	Heptachlor Epoxide	5.65	LCS	P	0 - 30
LFB	Methoxychlor	3.92	LCS	P	0 - 30
LFB	Mirex	2.85	LCS	P	0 - 30
LFB	Permethrin	3.13	LCS	P	0 - 30
LFB	Trifluralin	15.0	LCS	P	0 - 30

Reference Method: EPA 8270D

Batch ID: P323477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887277	Acetochlor	0.484	Spike	P	0 - 30
1887277	Alachlor	10.6	Spike	P	0 - 30
1887277	Ametryn	0.832	Spike	P	0 - 30
1887277	Atrazine	21.9	Spike	P	0 - 30
1887277	Atrazine Desethyl	16.2	Spike	P	0 - 30
1887277	Azinphos Methyl	14.4	Spike	P	0 - 30
1887277	Bromacil	0.233	Spike	P	0 - 30
1887277	Butylate	8.83	Spike	P	0 - 30
1887277	Chlorpyrifos Ethyl	0.224	Spike	P	0 - 30
1887277	Chlorpyrifos Methyl	3.53	Spike	P	0 - 30
1887277	Cyanazine	20.4	Spike	P	0 - 30
1887277	Demeton	20.7	Spike	P	0 - 30
1887277	Diazinon	1.10	Spike	P	0 - 30
1887277	Disulfoton	2.24	Spike	P	0 - 30
1887277	EPTC	5.68	Spike	P	0 - 30
1887277	Ethion	4.56	Spike	P	0 - 30
1887277	Ethoprop	4.50	Spike	P	0 - 30
1887277	Fenamiphos	11.3	Spike	P	0 - 30
1887277	Fipronil	13.2	Spike	P	0 - 30
1887277	Fipronil Sulfide	16.6	Spike	P	0 - 30
1887277	Fipronil Sulfone	34.8	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P323477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887277	Fonofos	4.12	Spike	P	0 - 30
1887277	Hexazinone	0.145	Spike	P	0 - 30
1887277	Malathion	3.98	Spike	P	0 - 30
1887277	Metalaxyl	1.65	Spike	P	0 - 30
1887277	Metolachlor	1.77	Spike	P	0 - 30
1887277	Metribuzin	0.133	Spike	P	0 - 30
1887277	Mevinphos	2.00	Spike	P	0 - 30
1887277	Molinate	8.36	Spike	P	0 - 30
1887277	Norflurazon	12.9	Spike	P	0 - 30
1887277	Parathion Ethyl	0.482	Spike	P	0 - 30
1887277	Parathion Methyl	2.40	Spike	P	0 - 30
1887277	Pendimethalin	2.07	Spike	P	0 - 30
1887277	Phorate	5.24	Spike	P	0 - 30
1887277	Prometon	6.37	Spike	P	0 - 30
1887277	Prometryn	1.31	Spike	P	0 - 30
1887277	Simazine	1.12	Spike	P	0 - 30
1887277	Terbufos	5.41	Spike	P	0 - 30
1887277	Terbutylazine	0.872	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P323079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887097	Sucralose	3.28	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P323390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887304	Glyphosate	1.18	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P323413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887272	Pyraclostrobin	7.13	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P323113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887259	Color (true)	1.42	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P323543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887138	Total Alkalinity	0.0884	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887259	TDS	6.24	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1891234	Fluoride	0.487	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887224	Organic Carbon	0.537	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P323095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887113	2,4-D	19.0	Spike	P	0 - 30
1887113	Acetaminophen	17.7	Spike	P	0 - 30
1887113	Bentazon	0.944	Spike	P	0 - 30
1887113	Carbamazepine	4.77	Spike	P	0 - 30
1887113	MCP	16.5	Spike	P	0 - 30
1887113	Primidone	7.17	Spike	P	0 - 30
1887113	Triclopyr	8.16	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P323371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1888144	Diuron	7.19	Spike	P	0 - 30
1888144	Fenuron	1.96	Spike	P	0 - 30
1888144	Fluridone	4.14	Spike	P	0 - 30
1888144	Imidacloprid	3.65	Spike	P	0 - 30
1888144	Linuron	16.6	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1887271
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	55.6	P	50 - 150
EPA 8321B	Sucralose-d6	97.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	105	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	54.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	57.8	P	40 - 160
USGS O-2060-01	Diuron-d6	50.4	P	40 - 150
USGS O-2060-01	Primidone-d5	72.8	P	40 - 150

Lab Sample ID: 1887272
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	75.6	P	40 - 150

Lab Sample ID: 1887276
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	73.8	P	51 - 123
EPA 8270D	Tetrachloro-m-xylene	44.8	P	31 - 111

Lab Sample ID: 1887277
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	85.2	P	62 - 132
EPA 8270D	Simazine-d10	87.4	P	72 - 127

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75721
Included Lab Sample IDs: 1887261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	98.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A75722
Included Lab Sample IDs: 1887259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.8	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75725
Included Lab Sample IDs: 1887260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75732

Included Lab Sample IDs: 1887259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75754

Included Lab Sample IDs: 1887260

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75759

Included Lab Sample IDs: 1887260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75763

Included Lab Sample IDs: 1887260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A75769

Included Lab Sample IDs: 1887260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	95.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75780

Included Lab Sample IDs: 1887259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	99.2	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A75783

Included Lab Sample IDs: 1887271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	97.2	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A75799

Included Lab Sample IDs: 1887271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	96.8	78.8	P/P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A75820
Included Lab Sample IDs: 1887271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	105	P/P	50 - 150
Bentazon	81.4	91.0	P/P	50 - 150
MCPP	128	133	P/P	50 - 150
Triclopyr	113	109	P/P	50 - 150

Reference Method: SM 2320 B-97
Run ID: A75835
Included Lab Sample IDs: 1887259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A75845
Included Lab Sample IDs: 1887272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	129	114	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A75845
Included Lab Sample IDs: 1887271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	128	122	P/P	60 - 150
Fenuron	117	119	P/P	60 - 150
Fluridone	112	118	P/P	60 - 150
Imidacloprid	95.6	96.4	P/P	60 - 150
Linuron	130	103	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A75847
Included Lab Sample IDs: 1887271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	124	124	P/P	60 - 150
Carbamazepine	145	131	P/P	60 - 150
Primidone	109	103	P/P	60 - 150

Reference Method: EPA 8270D
Run ID: A75907
Included Lab Sample IDs: 1887276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	95.7		P	80 - 120
Alpha-BHC	93.1		P	80 - 120
Alpha-Chlordane	84.3		P	80 - 120
Beta-BHC	103		P	80 - 120
Carbophenothion	92.0		P	80 - 120
Chlorothalonil	81.6		P	80 - 120
Cypermethrin	106		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A75907
Included Lab Sample IDs: 1887276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDD-p,p'	85.5		P	80 - 120
DDE-p,p'	81.8		P	80 - 120
DDT-p,p'	102		P	80 - 120
Delta-BHC	105		P	80 - 120
Dicofol	92.7		P	80 - 120
Dieldrin	85.4		P	80 - 120
Endosulfan I	82.7		P	80 - 120
Endosulfan II	90.3		P	80 - 120
Endosulfan Sulfate	96.3		P	80 - 120
Endrin	83.9		P	80 - 120
Endrin Aldehyde	82.9		P	80 - 120
Endrin Ketone	98.9		P	80 - 120
Gamma-BHC	96.7		P	80 - 120
Gamma-Chlordane	84.3		P	80 - 120
Heptachlor	77.3*		F	80 - 120
Heptachlor Epoxide	100		P	80 - 120
Methoxychlor	107		P	80 - 120
Mirex	97.8		P	80 - 120
Permethrin	102		P	80 - 120
Trifluralin	114		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A75916
Included Lab Sample IDs: 1887275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	93.9	93.5	P/P	90 - 110
Chromium	100	99.2	P/P	90 - 110
Copper	93.0	92.6	P/P	90 - 110
Lead	95.7	95.1	P/P	90 - 110
Nickel	93.7	93.1	P/P	90 - 110
Silver	94.6	94.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A75945
Included Lab Sample IDs: 1887275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	96.8	98.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A76018
Included Lab Sample IDs: 1887275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	100	P/P	90 - 110
Iron	100	101	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	103	102	P/P	90 - 110
Sodium	100	99.4	P/P	90 - 110
Zinc	106	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
 Run ID: A76101
 Included Lab Sample IDs: 1887277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	96.8		P	80 - 120
Alachlor	98.4		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine	96.1		P	80 - 120
Atrazine Desethyl	99.1		P	80 - 120
Azinphos Methyl	98.1		P	80 - 120
Bromacil	103		P	80 - 120
Butylate	99.8		P	80 - 120
Chlorpyrifos Ethyl	95.7		P	80 - 120
Chlorpyrifos Methyl	95.5		P	80 - 120
Cyanazine	94.6		P	80 - 120
Demeton	96.1		P	80 - 120
Diazinon	98.7		P	80 - 120
Disulfoton	92.3		P	80 - 120
EPTC	101		P	80 - 120
Ethion	93.6		P	80 - 120
Ethoprop	102		P	80 - 120
Fenamiphos	92.5		P	80 - 120
Fipronil	99.1		P	80 - 120
Fipronil Sulfide	95.1		P	80 - 120
Fipronil Sulfone	97.1		P	80 - 120
Fonofos	99.3		P	80 - 120
Hexazinone	98.6		P	80 - 120
Malathion	92.9		P	80 - 120
Metaxyl	96.7		P	80 - 120
Metolachlor	101		P	80 - 120
Metribuzin	97.7		P	80 - 120
Mevinphos	103		P	80 - 120
Molinate	101		P	80 - 120
Norflurazon	92.1		P	80 - 120
Parathion Ethyl	95.6		P	80 - 120
Parathion Methyl	102		P	80 - 120
Pendimethalin	95.2		P	80 - 120
Phorate	102		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	95.5		P	80 - 120
Simazine	102		P	80 - 120
Terbufos	95.5		P	80 - 120
Terbutylazine	96.4		P	80 - 120

Reference Method: SM 4500 F-C-97
 Run ID: A76201
 Included Lab Sample IDs: 1887259

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

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.0	
EPA 200.7 Rev. 4.4	Calcium	104		108	103			1.60
	Iron	103		106	104	106		1.91
	Magnesium	103		107	102			2.02
	Potassium	103		108	103	104		0.919
	Sodium	104		104	101	104		1.63
	Zinc	99.8		104	99.3	103		3.18
EPA 200.8 Rev. 5.4	Arsenic	92.8		95.1	95.2	94.4		0.771
	Cadmium	94.4		97.4	98.1	96.9		1.24
	Chromium	99.8		104	101	101		0.513
	Copper	91.0		95.9	89.5	90.2		0.821
	Lead	96.1		98.4	96.8	96.8		0.0618
	Nickel	91.9		93.8	92.0	92.4		0.464
	Silver	96.0		98.3	97.7	97.8		0.0724
EPA 300.0 Rev. 2.1	Chloride	104		102	103		0.286	
	Sulfate	100		99.7	101		0.438	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1		106	104			1.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0		98.3	97.3			0.907
EPA 353.2 Rev. 2.0	NO2NO3-N	100		100	99.0			1.01
EPA 365.1 Rev. 2.0	Total-P	105		101	100			1.17
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0		97.6	95.4			1.44
EPA 8270D	Acetochlor	104		109	109			0.484
	Alachlor	103		95.5	106			10.6
	Aldrin	79.9	83.3	46.0	58.0	4.13		23.0
	Alpha-BHC	88.8	90.1	92.3	75.3	1.48		20.3
	Alpha-Chlordane	97.8	89.7	52.8	78.0	8.60		38.5
	Ametryn	121		162	160			0.832
	Atrazine	107						21.9
	Atrazine Desethyl	91.6		103	87.3			16.2
	Azinphos Methyl	121		240	208			14.4
	Beta-BHC	111	110	84.9	78.4	1.21		7.99
	Bromacil	91.7		106	106			0.233
	Butylate	68.5		33.2	36.3			8.83
	Carbophenothion	99.9	112	88.8	127	11.4		35.5
	Chlorothalonil	76.6	85.6	145	160	11.1		9.80
	Chlorpyrifos Ethyl	106		105	105			0.224
	Chlorpyrifos Methyl	104		99.7	96.2			3.53
	Cyanazine	144		148	120			20.4
	Cypermethrin	94.6	95.5	84.9	87.7	0.946		3.18
	DDD-p,p'	107	101	72.8	84.5	5.85		14.8
	DDE-p,p'	93.3	88.4	51.0	68.0	5.32		28.7
	DDT-p,p'	98.2	103	65.4	67.2	5.00		2.69
	Delta-BHC	121	116	110	111	4.62		0.302
	Demeton	118		118	95.7			20.7
	Diazinon	107		111	112			1.10
	Dicofol	50.6	45.3	18.7	24.4	11.0		26.6
	Dieldrin	102	91.7	60.2	79.8	10.2		28.0
	Disulfoton	112		100	102			2.24
	Endosulfan I	101	99.9	76.1	91.2	0.856		18.1
	Endosulfan II	106	109	90.7	101	2.89		11.2
	Endosulfan Sulfate	104	101	109	103	3.20		6.40
	Endrin	107	100	73.5	86.7	6.91		16.5
	Endrin Aldehyde	92.2	95.5	67.0	84.6	3.54		23.3
	Endrin Ketone	95.8	101	115	93.7	4.94		20.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 8270D	EPTC	66.8		31.7	29.9			5.68
	Ethion	116		116	111			4.56
	Ethoprop	103		108	103			4.50
	Fenamiphos	134		136	121			11.3
	Fipronil	115		121	106			13.2
	Fipronil Sulfide	103		113	95.8			16.6
	Fipronil Sulfone	102		99.2	69.8			34.8
	Fonofos	97.8		99.4	95.4			4.12
	Gamma-BHC	106	107	106	73.3	1.07		36.9
	Gamma-Chlordane	97.8	89.7	52.8	78.0	8.60		38.5
	Heptachlor	80.2	75.9	49.7	56.8	5.47		13.4
	Heptachlor Epoxide	99.8	94.3	72.2	94.5	5.65		26.8
	Hexazinone	105		110	110			0.145
	Malathion	115		119	114			3.98
	Metalaxyl	103		196	192			1.65
	Methoxychlor	108	112	78.4	79.2	3.92		1.07
	Metolachlor	110		216	211			1.77
	Metribuzin	128		150	150			0.133
	Mevinphos	120		98.4	96.4			2.00
	Mirex	87.1	89.6	58.0	66.4	2.85		13.4
	Molinate	79.3		55.2	50.8			8.36
	Norflurazon	114		108	94.8			12.9
	Parathion Ethyl	106		109	110			0.482
	Parathion Methyl	102		110	107			2.40
	Pendimethalin	103		111	113			2.07
	Permethrin	98.6	95.6	81.2	87.1	3.13		7.00
	Phorate	110		94.4	99.5			5.24
	Prometon	113		116	124			6.37
	Prometryn	119		129	127			1.31
	Simazine	101		137	135			1.12
	Terbufos	96.0		101	96.0			5.41
	Terbutylazine	103		109	110			0.872
	Trifluralin	132	154	133	136	15.0		1.76
EPA 8321B	Glyphosate	96.2		101	103			1.18
	Pyraclostrobin	100		92.0	98.8			7.13
	Sucralose	97.1		104	100			3.28
SM 2120 B	Color (true)						1.42	
SM 2320 B-97	Total Alkalinity	104					0.0884	
SM 2540 C-97	TDS						6.24	
SM 4500 F-C-97	Fluoride	98.1		98.4	99.0			0.487
SM 5310 B-00	Organic Carbon	101		103	102			0.537
USGS O-2060-01	2,4-D	85.6		124	103			19.0
	Acetaminophen	110		66.0	78.8			17.7
	Bentazon	106						0.944
	Carbamazepine	99.6		77.2	73.6			4.77
	Diuron	62.4		31.1	33.4			7.19
	Fenuron	86.4		40.4	41.2			1.96
	Fluridone	83.2		46.0	48.4			4.14
	Imidacloprid	70.8		82.9	78.9			3.65
	Linuron	101		62.8	53.2			16.6
	MCPP	100		98.0	116			16.5
	Primidone	73.2		63.6	59.2			7.17
	Triclopyr	84.4		122	113			8.16

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1887259
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1887275
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1887275
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1887259
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1887259
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1887260
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1887260
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1887260
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1887260
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1887261
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1887276
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1887277
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1887271
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1887272
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1887271
SM 2120 B / E31780	True Color measured at 450 nm	1887259
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1887259
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1887259
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1887259
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1887259
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1887260
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1887271
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1887271

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	04/11/2017			04/11/2017 16:14	Blanca Fach	1887259
EPA 200.7 Rev. 4.4	04/11/2017	04/18/2017	Elliott D. Healy	04/26/2017	Martin Acosta	1887275
EPA 200.8 Rev. 5.4	04/11/2017	04/18/2017	Elliott D. Healy	04/21/2017	Betina Topolski	1887275
EPA 300.0 Rev. 2.1	04/11/2017			04/15/2017	Ping Hua	1887259
EPA 350.1 Rev. 2.0	04/11/2017			04/11/2017	Julie Michelle Frank	1887260
EPA 351.2 Rev. 2.0	04/11/2017	04/12/2017	Adrian Shelby	04/13/2017	Joseph Suarez	1887260
EPA 353.2 Rev. 2.0	04/11/2017			04/13/2017	Beverly Y. Sanders	1887260
EPA 365.1 Rev. 2.0	04/11/2017	04/12/2017	Vijayalakshmi Reddy	04/13/2017	Lipi Saha	1887260
EPA 365.1 Rev. 2.0 dissolved	04/11/2017			04/11/2017 14:42	Lipi Saha	1887261
EPA 8270D	04/11/2017	04/14/2017	Fe-Val Siddell	04/17/2017	Vandana T. Nagar	1887276
	04/11/2017	04/17/2017	John Kaba	04/22/2017	Irina Carbone	1887277
EPA 8321B	04/11/2017	04/12/2017	Mohammad Ghaffari	04/13/2017	Mohammad Ghaffari	1887271
	04/11/2017	04/14/2017	Mohammad Ghaffari	04/14/2017	Mohammad Ghaffari	1887271
	04/11/2017	04/16/2017	Fe-Val Siddell	04/19/2017	Juyoung Kim	1887272
SM 2120 B	04/11/2017			04/11/2017 16:13	Julia Storbeck	1887259
SM 2320 B-97	04/11/2017			04/17/2017	Dale L. Simmons	1887259
SM 2540 C-97	04/11/2017			04/14/2017	Yijie Li	1887259
SM 2540 D-97	04/11/2017			04/14/2017	Yijie Li	1887259
SM 4500 F-C-97	04/11/2017			05/02/2017	Dale L. Simmons	1887259
SM 5310 B-00	04/11/2017			04/12/2017	Julie Michelle Frank	1887260
USGS O-2060-01	04/11/2017	04/12/2017	Fe-Val Siddell	04/15/2017	Juyoung Kim	1887271
	04/11/2017	04/12/2017	Fe-Val Siddell	04/16/2017	Juyoung Kim	1887271
	04/11/2017	04/12/2017	Fe-Val Siddell	04/18/2017	Juyoung Kim	1887271