

Chemical Analysis Report

SE-DIST-2017-02-22-01

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

Event Description: **SMP-G5 South Run (2/5)**

Request ID: **RQ-2017-02-20-11**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact

Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 17-MAR-2017 13:13



Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: L8 Canal

Collection Date/Time: 02/21/2017 11:20

Field ID: G3SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874545	EPA 180.1 Rev. 2.0	Turbidity	8.7		NTU	P320310	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P321343	
		Sulfate	120		mg SO4/L	P321345	
	SM 2120 B	Color (true)	38		PCU	P320324	
	SM 2320 B-97	Total Alkalinity	181		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	689		mg/L	P320845	
	SM 2540 D-97	TSS	6	I	mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P320894	
1874549	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P320444	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P320484	
1874553	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P320304	

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: M-Canal

Collection Date/Time: 02/21/2017 11:40

Field ID: G5SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874546	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P320309	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P321343	
		Sulfate	31		mg SO4/L	P321345	
	SM 2120 B	Color (true)	41		PCU	P320326	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	304		mg/L	P320845	
	SM 2540 D-97	TSS	11		mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P320894	
1874550	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P320444	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P320484	
1874554	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P320304	

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: Ocean Canal @ SR 700

Collection Date/Time: 02/21/2017 11:55

Field ID: G5SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874547	EPA 180.1 Rev. 2.0	Turbidity	23		NTU	P320309	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P321343	
		Sulfate	29		mg SO4/L	P321345	

Field ID: G5SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874547	SM 2120 B	Color (true)	36		PCU	P320326	
	SM 2320 B-97	Total Alkalinity	111		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	273		mg/L	P320845	
	SM 2540 D-97	TSS	8	I	mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P320894	
1874551	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P320444	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.45		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P320484	
1874555	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P320304	

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: WPB Canal

Collection Date/Time: 02/21/2017 12:10

Field ID: G5SE0058

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874563	EPA 180.1 Rev. 2.0	Turbidity	34		NTU	P320310	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P321343	
		Sulfate	24		mg SO4/L	P321345	
	SM 2120 B	Color (true)	35		PCU	P320326	
	SM 2320 B-97	Total Alkalinity	104		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	251		mg/L	P320846	
	SM 2540 D-97	TSS	16		mg/L	P320838	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P320894	
1874564	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P320445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P320369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P320484	
1874565	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.068		mg P/L	P320304	
1874627	EPA 8321B	Sucralose**	0.093		ug/L	P320274	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P320202	
		Fenuron	0.0080	U	ug/L	P320202	
		Imidacloprid	0.0040	U	ug/L	P320202	
		Linuron	0.0040	U	ug/L	P320202	
		Acetaminophen**	0.0040	U	ug/L	P320202	
		Carbamazepine**	4.0E-04	U	ug/L	P320202	
		Primidone**	0.0080	U	ug/L	P320202	
		Fluridone**	0.0029		ug/L	P320202	MS

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: C-6 Miami Canal @ SR 80

Collection Date/Time: 02/21/2017 13:00

Field ID: 28010980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874548	EPA 180.1 Rev. 2.0	Turbidity	21	A	NTU	P320310	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P321343	
		Sulfate	21		mg SO4/L	P321345	
	SM 2120 B	Color (true)	41	A	PCU	P320326	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	212	A	mg/L	P320846	
	SM 2540 D-97	TSS	27		mg/L	P320838	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P320894	
1874552	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P320445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P320484	
1874556	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P320304	

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: 715 Farms : Morgan Rd. @ CR 715

Collection Date/Time: 02/21/2017 14:05

Field ID: 28010984

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874557	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P320310	
	EPA 300.0 Rev. 2.1	Chloride	300		mg Cl/L	P321343	
		Sulfate	180		mg SO4/L	P321345	
	SM 2120 B	Color (true)	89	A	PCU	P320324	
	SM 2320 B-97	Total Alkalinity	355		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	1.19E+03		mg/L	P320846	
	SM 2540 D-97	TSS	3	I	mg/L	P320838	
	SM 4500 F-C-97	Fluoride	0.65		mg F/L	P320894	
1874559	EPA 350.1 Rev. 2.0	Ammonia-N	0.64		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P320369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P320484	
1874561	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P320304	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: East Branch : Canal near Pahokee WWTP

Collection Date/Time: 02/21/2017 14:35

Field ID: G5SE0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874558	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P320310	
	EPA 300.0 Rev. 2.1	Chloride	48		mg Cl/L	P321343	
		Sulfate	24		mg SO4/L	P321345	

Field ID: G5SE0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874558	SM 2120 B	Color (true)	41		PCU	P320326	
	SM 2320 B-97	Total Alkalinity	111		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	252		mg/L	P320846	
	SM 2540 D-97	TSS	9	I	mg/L	P320838	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P320894	
1874560	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P320369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P320484	
1874562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P320304	

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320309

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320310

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321343

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321345

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P320444

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P320445

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320369

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320304

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P320324

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P320326

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P320590

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

Reference Method: SM 2540 C-97
Batch ID: P320845

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P320846

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320837

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320838

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320484

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

Reference Method: USGS O-2060-01
Batch ID: P320202

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320445

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320369

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320304

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P320590

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

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	79.2		P	40 - 140
Carbamazepine	115		P	40 - 140
Diuron	85.2		P	40 - 140
Fenuron	105		P	40 - 140
Fluridone	86.8		P	40 - 140
Imidacloprid	102		P	40 - 160
Linuron	92.8		P	40 - 140
Primidone	86.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874535	Chloride	97.0		P	90 - 110
1875342	Chloride	98.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874535	Sulfate	95.9		P	90 - 110
1875342	Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874500	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874552	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874745	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874536	Kjeldahl Nitrogen	96.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874538	NO2NO3-N	98.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874549	Total-P	95.1	92.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874556	O-Phosphate-P	96.4	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P320274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874519	Sucralose	82.6	74.3	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872795	Fluoride	97.8	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P320484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874000	Organic Carbon	94.4	93.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874049	Acetaminophen	72.4	72.0	P/P	40 - 140
1874049	Carbamazepine	58.0	49.6	P/P	40 - 140
1874049	Diuron	41.2	46.8	P/P	40 - 140
1874049	Fenuron	49.2	49.2	P/P	40 - 140
1874049	Fluridone	38.7	48.3	F/P	40 - 140
1874049	Imidacloprid	113	110	P/P	40 - 160
1874049	Linuron	70.0	60.8	P/P	40 - 140
1874049	Primidone	48.0	58.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874460	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874548	Turbidity	0.935	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874535	Chloride	0.0572	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874535	Sulfate	4.22	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874500	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874552	Ammonia-N	0.809	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874745	Ammonia-N	0.336	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874536	Kjeldahl Nitrogen	3.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874648	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874538	NO2NO3-N	0.917	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874549	Total-P	2.29	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874556	O-Phosphate-P	1.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P320274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874519	Sucralose	10.4	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P320324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874557	Color (true)	1.39	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P320326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874548	Color (true)	14.6	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P320590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875084	Total Alkalinity	0.163	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P320845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874533	TDS	6.54	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P320846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874548	TDS	8.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872795	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874000	Organic Carbon	0.504	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P320202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874049	Acetaminophen	0.554	Spike	P	0 - 30
1874049	Carbamazepine	15.6	Spike	P	0 - 30
1874049	Diuron	12.7	Spike	P	0 - 30
1874049	Fenuron	0.0	Spike	P	0 - 30
1874049	Fluridone	19.8	Spike	P	0 - 30
1874049	Imidacloprid	2.15	Spike	P	0 - 30
1874049	Linuron	14.1	Spike	P	0 - 30
1874049	Primidone	19.5	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: 1874627
Field Sample ID: G5SE0058

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	96.4	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	58.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	73.4	P	40 - 160
USGS O-2060-01	Diuron-d6	53.4	P	40 - 150
USGS O-2060-01	Primidone-d5	72.4	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74651
Included Lab Sample IDs: 1874553, 1874554, 1874555, 1874556, 1874561, 1874562, 1874565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	96.9	100	P/P	90 - 110
O-Phosphate-P	99.6	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74653
Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105
Turbidity	99.0	102	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A74656
Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A74656

Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.1	95.3	P/P	85 - 115
Color (true)	96.2	96.5	P/P	85 - 115

Reference Method: USGS O-2060-01

Run ID: A74666

Included Lab Sample IDs: 1874627

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	91.6	96.4	P/P	60 - 150
Carbamazepine	116	133	P/P	60 - 150
Diuron	111	105	P/P	60 - 150
Fenuron	122	125	P/P	60 - 150
Fluridone	119	111	P/P	60 - 150
Imidacloprid	110	109	P/P	60 - 150
Linuron	89.6	90.0	P/P	60 - 150
Primidone	121	112	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A74670

Included Lab Sample IDs: 1874627

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.5	114	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74696

Included Lab Sample IDs: 1874549, 1874550, 1874551, 1874552, 1874564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	106	P/P	90 - 110
Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74700

Included Lab Sample IDs: 1874549, 1874550, 1874551, 1874552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.5	P/P	90 - 110
Kjeldahl Nitrogen	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74707

Included Lab Sample IDs: 1874550, 1874551, 1874552, 1874560, 1874564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	98.3	P/P	90 - 110
Total-P	98.2	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74711

Included Lab Sample IDs: 1874559, 1874560, 1874564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.1	P/P	90 - 110
Kjeldahl Nitrogen	99.1	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74716

Included Lab Sample IDs: 1874549, 1874559

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

Reference Method: SM 5310 B-00

Run ID: A74718

Included Lab Sample IDs: 1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74741

Included Lab Sample IDs: 1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74752

Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74758

Included Lab Sample IDs: 1874559, 1874560

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

Reference Method: SM 4500 F-C-97

Run ID: A74865

Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.9	P/P	90 - 110
Fluoride	98.9	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.6	P/P	90 - 110
Chloride	99.6	103	P/P	90 - 110
Sulfate	92.5	96.8	P/P	90 - 110
Sulfate	96.8	92.6	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	
	Turbidity				0.935	
EPA 300.0 Rev. 2.1	Chloride	98.8	97.0 98.8		0.0572	
	Sulfate	92.7	95.9 96.6		4.22	
EPA 350.1 Rev. 2.0	Ammonia-N	106	102 100			1.34
	Ammonia-N	106	101 102			0.809
	Ammonia-N	101	100 101			0.336
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	96.6 102			3.54
	Kjeldahl Nitrogen	105				2.66
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.8 99.8			0.917
EPA 365.1 Rev. 2.0	Total-P	96.7	95.1 92.7			2.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.4 98.1			1.49
EPA 8321B	Sucralose	89.7	82.6 74.3			10.4
SM 2120 B	Color (true)				1.39	
	Color (true)				14.6	
SM 2320 B-97	Total Alkalinity	104			0.163	
SM 2540 C-97	TDS				6.54	
	TDS				8.00	
SM 4500 F-C-97	Fluoride	97.0	97.8 100			1.42
SM 5310 B-00	Organic Carbon	98.2	94.4 93.6			0.504
USGS O-2060-01	Acetaminophen	79.2	72.4 72.0			0.554
	Carbamazepine	115	58.0 49.6			15.6
	Diuron	85.2	41.2 46.8			12.7
	Fenuron	105	49.2 49.2			0.0
	Fluridone	86.8	38.7 48.3			19.8
	Imidacloprid	102	113 110			2.15
	Linuron	92.8	70.0 60.8			14.1
	Primidone	86.4	48.0 58.4			19.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1874553, 1874554, 1874555, 1874556, 1874561, 1874562, 1874565
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1874627
SM 2120 B / E31780	True Color measured at 450 nm	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1874627

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/22/2017			02/22/2017 15:55	Sima Feizi	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
EPA 300.0 Rev. 2.1	02/22/2017			03/09/2017	Elisa J Lutz	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
EPA 350.1 Rev. 2.0	02/22/2017			02/23/2017	Sofia Elnemr	1874549, 1874550, 1874551, 1874552, 1874564
	02/22/2017			02/27/2017	Sofia Elnemr	1874559, 1874560
EPA 351.2 Rev. 2.0	02/22/2017	02/23/2017	Adrian Shelby	02/24/2017	Joseph Suarez	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 353.2 Rev. 2.0	02/22/2017			02/27/2017	Beverly Y. Sanders	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 365.1 Rev. 2.0	02/22/2017	02/23/2017	Adrian Shelby	02/24/2017	Lipi Saha	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
EPA 365.1 Rev. 2.0 dissolved	02/22/2017			02/22/2017 14:17	Julia Storbeck	1874556
	02/22/2017			02/22/2017 14:41	Julia Storbeck	1874555, 1874562
	02/22/2017			02/22/2017 14:42	Julia Storbeck	1874565
	02/22/2017			02/22/2017 14:43	Julia Storbeck	1874561
	02/22/2017			02/22/2017 14:56	Julia Storbeck	1874553
	02/22/2017			02/22/2017 14:57	Julia Storbeck	1874554
EPA 8321B	02/22/2017	02/22/2017	Mohammad Ghaffari	02/22/2017	Mohammad Ghaffari	1874627
SM 2120 B	02/22/2017			02/22/2017 16:44	Julie Michelle Frank	1874545
	02/22/2017			02/22/2017 16:48	Julie Michelle Frank	1874557
	02/22/2017			02/22/2017 17:05	Julie Michelle Frank	1874546
	02/22/2017			02/22/2017 17:06	Julie Michelle Frank	1874547
	02/22/2017			02/22/2017 17:07	Julie Michelle Frank	1874548
	02/22/2017			02/22/2017 17:08	Julie Michelle Frank	1874558
	02/22/2017			02/22/2017 17:09	Julie Michelle Frank	1874563
SM 2320 B-97	02/22/2017			02/25/2017	Dale L. Simmons	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 2540 C-97	02/22/2017			02/24/2017	Yijie Li	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 2540 D-97	02/22/2017			02/24/2017	Yijie Li	1874545, 1874546, 1874547, 1874548, 1874557, 1874558, 1874563
SM 4500 F-C-97	02/22/2017			03/02/2017	Dale L. Simmons	1874545, 1874546, 1874547, 1874548
	02/22/2017			03/03/2017	Dale L. Simmons	1874557, 1874558, 1874563
SM 5310 B-00	02/22/2017			02/23/2017	Julie Michelle Frank	1874549, 1874550, 1874551, 1874552, 1874559, 1874560, 1874564
USGS O-2060-01	02/22/2017	02/23/2017	Hoor Shaik	02/24/2017	Juyoung Kim	1874627