

Chemical Analysis Report

SO-DIST-2017-09-26-02

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

Event Description: **SMP: Lee County Streams**

Request ID: **RQ-2017-09-11-03**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Ben Paswater

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 19-OCT-2017 11:33



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: Oak Creek @ Oak Creek Preserve

Collection Date/Time: 09/25/2017 11:15

Field ID: G1SD092517-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931341	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P332254	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P332362	
		Sulfate	4.0		mg SO4/L	P332365	
	SM 2120 B	Color (true)	150	J	PCU	P332277	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P332631	
	SM 2540 C-97	TDS	207		mg/L	P332561	
	SM 2540 D-97	TSS	4	I	mg/L	P332587	
	SM 4500 F-C-97	Fluoride	0.086	I	mg F/L	P332635	
1931343	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P332756	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P332425	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P332607	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P332395	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P332408	
1931345	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P332271	

Ref. Method and Comment:

SM 2120 B: Result marginally over calibration range.

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: Hendry Creek @ Old Gladiolus Dr.

Collection Date/Time: 09/25/2017 09:40

Field ID: G1SD092517-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931347	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P332254	
	SM 2320 B-97	Total Alkalinity	192		mg CaCO3/L	P332631	
	SM 2540 D-97	TSS	3	I	mg/L	P332588	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P332635	
1931349	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P332756	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P332425	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P332607	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P332395	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P332408	
1931351	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P332272	

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: Hendry Creek @ Old Gladiolus Dr.

Collection Date/Time: 09/25/2017 09:40

Field ID: G1SD092517-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931395	EPA 8321B	Sucralose**	0.16		ug/L	P332225	
	USGS O-2060-01	2,4-D	0.0052	I	ug/L	P332226	
		Diuron	0.0095		ug/L	P332226	
		Fenuron	0.0080	U	ug/L	P332226	
		2,4,5-T	0.0040	U	ug/L	P332226	

Field ID: G1SD092517-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931395	USGS O-2060-01	Acifluorfen	0.0080	U	ug/L	P332226	MS
		Imidacloprid	0.087		ug/L	P332226	
		Bentazon	0.012		ug/L	P332226	MS
		Linuron	0.0040	U	ug/L	P332226	
		Acetaminophen**	0.0080	U	ug/L	P332226	
		Carbamazepine**	5.8E-04	I	ug/L	P332226	
		Silvex	0.0040	U	ug/L	P332226	
		Primidone**	0.0040	U	ug/L	P332226	
		Fluridone**	0.015		ug/L	P332226	

Ref. Method and Comment:

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

Sample Location: Imperial River near US 41

Collection Date/Time: 09/25/2017 10:20

Field ID: G1SD092517-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931348	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P332254	
	SM 2320 B-97	Total Alkalinity	97		mg CaCO3/L	P332631	
	SM 2540 D-97	TSS	4	IA	mg/L	P332589	
	SM 4500 F-C-97	Fluoride	0.074	I	mg F/L	P332635	
1931350	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P332540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P332499	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P332607	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P332395	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P332514	
1931352	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P332272	

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: Imperial River near US 41

Collection Date/Time: 09/25/2017 10:20

Field ID: G1SD092517-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931396	EPA 8321B	Sucralose**	0.030	I	ug/L	P333208	
	USGS O-2060-01	2,4-D	0.015		ug/L	P332226	
		Diuron	0.0078		ug/L	P332226	
		Fenuron	0.0080	U	ug/L	P332226	
		2,4,5-T	0.0040	U	ug/L	P332226	
		Acifluorfen	0.0080	U	ug/L	P332226	MS
		Imidacloprid	0.019		ug/L	P332226	
		Bentazon	0.0036		ug/L	P332226	MS
		Linuron	0.0040	U	ug/L	P332226	
		Acetaminophen**	0.024	I	ug/L	P332226	
		Carbamazepine**	4.0E-04	U	ug/L	P332226	
		Silvex	0.0040	U	ug/L	P332226	
		Primidone**	0.0040	U	ug/L	P332226	

Field ID: G1SD092517-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931396	USGS O-2060-01	Fluridone**	0.0011	I	ug/L	P332226	

Ref. Method and Comment:

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

Sample Location: Field Blank

Collection Date/Time: 09/25/2017 12:00

Field ID: G1SD092517-6

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931342	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P332254	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P332362	
		Sulfate	0.20	U	mg SO4/L	P332365	
	SM 2120 B	Color (true)	2.5	U	PCU	P332277	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P332631	
	SM 2540 C-97	TDS	15	U	mg/L	P332559	
	SM 2540 D-97	TSS	2	U	mg/L	P332584	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P332635	
1931344	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P332538	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P332425	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P332607	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P332395	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P332408	
1931346	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332272	

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: P332254

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332362

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332365

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P332538

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332538

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332540

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332425

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332499

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332607

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: P332395

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332271

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332272

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P332225

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P333208

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332277

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P332631

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

Reference Method: SM 2540 C-97
Batch ID: P332559

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P332561

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P332584

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P332587

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P332588

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P332589

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P332635

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P332408

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

Reference Method: SM 5310 B-00
 Batch ID: P332514

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

Reference Method: USGS O-2060-01
 Batch ID: P332226

Component	Result	Code	Units
2,4,5-T	0.0040	U	ug/L
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acifluorfen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0040	U	ug/L
Silvex	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P332362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P332365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332538

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332540

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

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: P332425

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: P332499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332395

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332271

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332272

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

Reference Method: EPA 8321B
Batch ID: P332225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P333208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	129		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P332631

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

Reference Method: SM 4500 F-C-97
Batch ID: P332635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P332408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P332514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	74.4		P	40 - 150
2,4-D	71.9		P	40 - 150
Acetaminophen	139		P	30 - 150
Acifluorfen	44.7		P	40 - 150
Bentazon	47.7		P	40 - 150
Carbamazepine	118		P	40 - 150
Diuron	102		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	120		P	40 - 150
Imidacloprid	97.8		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P332226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	106		P	40 - 150
Primidone	100		P	40 - 150
Silvex	77.9		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931421	Chloride	95.5		P	90 - 110
1931433	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931421	Sulfate	96.8		P	90 - 110
1931433	Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931296	Ammonia-N	98.8	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931418	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931773	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931438	Kjeldahl Nitrogen	95.8	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931296	NO2NO3-N	108	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P332395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931349	Total-P	98.6	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P332271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931323	O-Phosphate-P	95.4	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P332272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931351	O-Phosphate-P	94.4	95.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P332225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931706	Sucralose	40.2	42.5	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P333208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935714	Sucralose	77.1	77.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P332635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931611	Fluoride	95.8	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P332408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931188	Organic Carbon	94.1	94.2	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P332514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931437	Organic Carbon	97.4	99.8	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P332226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931706	2,4,5-T	51.5	55.2	P/P	40 - 150
1931706	2,4-D	61.9	64.6	P/P	40 - 150
1931706	Acetaminophen	88.5	88.5	P/P	30 - 150
1931706	Acifluorfen	25.2	30.3	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P332226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931706	Bentazon	23.7	24.1	F/F	40 - 150
1931706	Carbamazepine	92.7	89.6	P/P	40 - 150
1931706	Diuron	72.1	73.7	P/P	40 - 150
1931706	Fenuron	90.0	87.9	P/P	40 - 150
1931706	Fluridone	50.4	43.2	P/P	40 - 150
1931706	Linuron	87.8	90.6	P/P	40 - 150
1931706	Primidone	103	102	P/P	40 - 150
1931706	Silvex	75.8	75.0	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931341	Turbidity	2.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931433	Chloride	7.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931433	Sulfate	16.8	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931296	Ammonia-N	0.921	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931418	Ammonia-N	1.73	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931773	Ammonia-N	1.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931343	Kjeldahl Nitrogen	2.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931438	Kjeldahl Nitrogen	0.638	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931296	NO2NO3-N	0.930	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931349	Total-P	0.0226	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931323	O-Phosphate-P	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931351	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P332225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931706	Sucralose	0.847	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P333208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935714	Sucralose	0.400	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P332277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931372	Color (true)	1.03	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P332631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931611	Total Alkalinity	0.333	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P332559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1930888	TDS	6.26	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P332561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931332	TDS	4.63	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P332635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931611	Fluoride	0.495	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P332408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931188	Organic Carbon	0.0262	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P332514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931437	Organic Carbon	2.00	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P332226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931706	2,4,5-T	6.97	Spike	P	0 - 30
1931706	2,4-D	3.03	Spike	P	0 - 30
1931706	Acetaminophen	0.0452	Spike	P	0 - 30
1931706	Acifluorfen	18.2	Spike	P	0 - 30
1931706	Bentazon	0.719	Spike	P	0 - 30
1931706	Carbamazepine	3.23	Spike	P	0 - 30
1931706	Diuron	2.08	Spike	P	0 - 30
1931706	Fenuron	2.43	Spike	P	0 - 30
1931706	Fluridone	10.3	Spike	P	0 - 30
1931706	Imidacloprid	4.13	Spike	P	0 - 30
1931706	Linuron	3.12	Spike	P	0 - 30
1931706	Primidone	0.775	Spike	P	0 - 30
1931706	Silvex	1.01	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: 1931395
Field Sample ID: G1SD092517-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	88.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	73.5	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	85.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	64.9	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	88.7	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 160
USGS O-2060-01	Diuron-d6	73.5	P	30 - 160
USGS O-2060-01	Primidone-d5	117	P	30 - 160
USGS O-2060-01	Sucralose-d6	85.2	P	40 - 160

Lab Sample ID: 1931396
Field Sample ID: G1SD092517-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	80.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.1	P	30 - 160
EPA 8321B	Diuron-d6	40.4	P	30 - 160
EPA 8321B	Primidone-d5	91.4	P	30 - 160
EPA 8321B	Sucralose-d6	49.6	P	40 - 160
EPA 8321B	Sucralose-d6	69.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	62.3	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	80.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	69.1	P	30 - 160
USGS O-2060-01	Diuron-d6	40.4	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1931396
Field Sample ID: G1SD092517-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Primidone-d5	91.4	P	30 - 160
USGS O-2060-01	Sucralose-d6	49.6	P	40 - 160
USGS O-2060-01	Sucralose-d6	69.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79162
Included Lab Sample IDs: 1931341, 1931342, 1931347, 1931348

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79167
Included Lab Sample IDs: 1931345, 1931346, 1931351, 1931352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	98.4	102	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A79170
Included Lab Sample IDs: 1931341, 1931342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79203
Included Lab Sample IDs: 1931341, 1931342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.0	99.6	P/P	90 - 110
Sulfate	94.3	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A79215
Included Lab Sample IDs: 1931343, 1931344, 1931349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	93.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A79261
Included Lab Sample IDs: 1931350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79267

Included Lab Sample IDs: 1931344, 1931350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79286

Included Lab Sample IDs: 1931343, 1931344, 1931349, 1931350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	107	P/P	90 - 110
Kjeldahl Nitrogen	107	106	P/P	90 - 110
Kjeldahl Nitrogen	110	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79287

Included Lab Sample IDs: 1931343, 1931350

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79298

Included Lab Sample IDs: 1931343, 1931344, 1931349, 1931350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79299

Included Lab Sample IDs: 1931344, 1931349

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

Reference Method: SM 2320 B-97

Run ID: A79305

Included Lab Sample IDs: 1931341, 1931342, 1931347, 1931348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.8	P/P	90 - 110
Total Alkalinity	99.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79305

Included Lab Sample IDs: 1931341, 1931342, 1931347, 1931348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.1	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A79344
 Included Lab Sample IDs: 1931343, 1931349

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

Reference Method: USGS O-2060-01
 Run ID: A79376
 Included Lab Sample IDs: 1931395, 1931396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	97.1	100	P/P	50 - 150
2,4-D	89.8	93.1	P/P	50 - 150
Acetaminophen	103	107	P/P	60 - 150
Acifluorfen	106	96.8	P/P	50 - 150
Bentazon	96.2	96.1	P/P	50 - 150
Carbamazepine	106	109	P/P	60 - 150
Diuron	102	111	P/P	60 - 150
Fenuron	101	101	P/P	60 - 150
Fluridone	121	117	P/P	60 - 160
Imidacloprid	93.8	100	P/P	60 - 150
Linuron	103	112	P/P	60 - 150
Primidone	94.0	108	P/P	60 - 150
Silvex	89.6	102	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A79445
 Included Lab Sample IDs: 1931395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.5	103	P/P	60 - 150

Reference Method: EPA 8321B
 Run ID: A79594
 Included Lab Sample IDs: 1931396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	104	P/P	60 - 150

* 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				2.02	
EPA 300.0 Rev. 2.1	Chloride	95.4	97.3 95.5		7.11	
	Sulfate	95.7	97.5 96.8		16.8	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.8 97.8			0.921
	Ammonia-N	103	101 102			1.73
	Ammonia-N	101	101 103			1.86

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104				2.91
	Kjeldahl Nitrogen	107	95.8	95.1		0.638
EPA 353.2 Rev. 2.0	NO2NO3-N	106	108	107		0.930
EPA 365.1 Rev. 2.0	Total-P	97.0	98.6	98.6		0.0226
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	95.4	96.3		0.939
	O-Phosphate-P	105	94.4	95.7		1.03
EPA 8321B	Sucralose	105	40.2	42.5		0.847
	Sucralose	129	77.1	77.4		0.400
SM 2120 B	Color (true)				1.03	
SM 2320 B-97	Total Alkalinity	102			0.333	
SM 2540 C-97	TDS				6.26	
	TDS				4.63	
SM 4500 F-C-97	Fluoride	97.2	95.8	96.3		0.495
SM 5310 B-00	Organic Carbon	94.8	94.1	94.2		0.0262
	Organic Carbon	100	97.4	99.8		2.00
USGS O-2060-01	2,4,5-T	74.4	51.5	55.2		6.97
	2,4-D	71.9	61.9	64.6		3.03
	Acetaminophen	139	88.5	88.5		0.0452
	Acifluorfen	44.7	25.2	30.3		18.2
	Bentazon	47.7	23.7	24.1		0.719
	Carbamazepine	118	92.7	89.6		3.23
	Diuron	102	72.1	73.7		2.08
	Fenuron	109	90.0	87.9		2.43
	Fluridone	120	50.4	43.2		10.3
	Imidacloprid	97.8				4.13
	Linuron	106	87.8	90.6		3.12
	Primidone	100	103	102		0.775
	Silvex	77.9	75.8	75.0		1.01

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1931341, 1931342, 1931347, 1931348
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1931341, 1931342
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1931341, 1931342
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1931343, 1931344, 1931349, 1931350
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1931343, 1931344, 1931349, 1931350
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1931343, 1931344, 1931349, 1931350
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1931343, 1931344, 1931349, 1931350
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1931345, 1931346, 1931351, 1931352
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1931395, 1931396
SM 2120 B / E31780	True Color measured at 450 nm	1931341, 1931342
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1931341, 1931342, 1931347, 1931348
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1931341, 1931342
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1931341, 1931342, 1931347, 1931348
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1931341, 1931342, 1931347, 1931348
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1931343, 1931344, 1931349, 1931350

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1931395, 1931396
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1931395, 1931396

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	09/26/2017			09/26/2017 15:39	Tanya Welborn	1931341, 1931342, 1931347, 1931348
EPA 300.0 Rev. 2.1	09/26/2017			09/27/2017	Julia Storbeck	1931341, 1931342
EPA 350.1 Rev. 2.0	09/26/2017			09/29/2017	Sofia Elnemr	1931344, 1931350
	09/26/2017			10/04/2017	Sofia Elnemr	1931343, 1931349
EPA 351.2 Rev. 2.0	09/26/2017	09/29/2017	Adrian Shelby	10/02/2017	Tanya Welborn	1931343, 1931344, 1931349, 1931350
EPA 353.2 Rev. 2.0	09/26/2017			10/03/2017	Beverly Y. Sanders	1931343, 1931344, 1931349, 1931350
EPA 365.1 Rev. 2.0	09/26/2017	09/28/2017	Sima Feizi	10/02/2017	Lipi Saha	1931343, 1931350
	09/26/2017	09/28/2017	Sima Feizi	10/03/2017	Lipi Saha	1931344, 1931349
EPA 365.1 Rev. 2.0 dissolved	09/26/2017			09/26/2017 14:51	Megan Treadwell	1931351
	09/26/2017			09/26/2017 15:13	Megan Treadwell	1931345
	09/26/2017			09/26/2017 15:14	Megan Treadwell	1931346
	09/26/2017			09/26/2017 15:15	Megan Treadwell	1931352
EPA 8321B	09/26/2017	09/29/2017	Hoor Shaik	10/06/2017	Juyoung Kim	1931395
	09/26/2017	10/12/2017	Juyoung Kim	10/16/2017	Juyoung Kim	1931396
SM 2120 B	09/26/2017			09/26/2017 15:34	DeAsia Armster	1931341
	09/26/2017			09/26/2017 15:35	DeAsia Armster	1931342
SM 2320 B-97	09/26/2017			10/02/2017	Dale L. Simmons	1931341, 1931342, 1931347, 1931348
SM 2540 C-97	09/26/2017			09/27/2017	Yijie Li	1931341, 1931342
SM 2540 D-97	09/26/2017			09/27/2017	Yijie Li	1931341, 1931342, 1931347, 1931348
SM 4500 F-C-97	09/26/2017			10/02/2017	Dale L. Simmons	1931341, 1931342, 1931347, 1931348
SM 5310 B-00	09/26/2017			09/28/2017	Ping Hua	1931343, 1931344, 1931349, 1931350
USGS O-2060-01	09/26/2017	09/29/2017	Hoor Shaik	10/03/2017	Julie Michelle Frank	1931395, 1931396