

Chemical Analysis Report

SE-DIST-2017-03-30-01

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

Event Description: **SMP-Dade Green Run**

Request ID: **RQ-2017-03-27-21**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

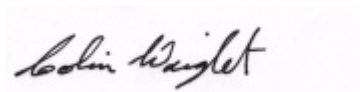
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 21-APR-2017 12:33

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: C-100/CUTLER DRAIN

Collection Date/Time: 03/29/2017 10:10

Field ID: G4SECD09

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884503	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P322541	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P323032	
		Sulfate	13		mg SO4/L	P323035	
	SM 2120 B	Color (true)	8.4		PCU	P322521	
	SM 2320 B-97	Total Alkalinity	212		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	299		mg/L	P323098	
	SM 2540 D-97	TSS	2	U	mg/L	P322875	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P323006	
1884508	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P322670	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P322582	
1884513	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322534	
1884541	EPA 8321B	Sucralose**	0.015	I	ug/L	P322428	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		2,4,5-T	0.0040	U	ug/L	P322600	
		Acifluorfen	0.010	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0058	I	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Silvex	0.0040	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	6.3E-04	I	ug/L	P322600	

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: C-100/CUTLER DRAIN

Collection Date/Time: 03/29/2017 10:30

Field ID: G4SECD09_DUPE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884504	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P322541	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P323032	
		Sulfate	13		mg SO4/L	P323035	
	SM 2120 B	Color (true)	8.3		PCU	P322521	
	SM 2320 B-97	Total Alkalinity	206	A	mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	296		mg/L	P323098	
	SM 2540 D-97	TSS	2	U	mg/L	P322875	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P323006	
1884509	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P322501	

Field ID: G4SECD09_DUPE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884509	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P322670	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P322582	
1884514	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322534	
1884542	EPA 8321B	Sucralose**	0.018	I	ug/L	P322428	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		2,4,5-T	0.0040	U	ug/L	P322600	
		Acifluorfen	0.010	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0065	I	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Silvex	0.0040	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	4.8E-04	I	ug/L	P322600	

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: C-2/SNAPPER CREEK

Collection Date/Time: 03/29/2017 11:00

Field ID: G4SE0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884505	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P322541	
	EPA 300.0 Rev. 2.1	Chloride	54		mg Cl/L	P323032	
		Sulfate	1.1		mg SO4/L	P323035	
		Color (true)	43		PCU	P322521	
	SM 2320 B-97	Total Alkalinity	214		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	322	A	mg/L	P323098	
	SM 2540 D-97	TSS	2	I	mg/L	P322875	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P323006	
1884510	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P322670	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P322582	
1884515	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322534	
1884543	EPA 8321B	Sucralose**	0.053		ug/L	P322428	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		2,4,5-T	0.0040	U	ug/L	P322600	

Field ID: G4SE0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884543	USGS O-2060-01	Acifluorfen	0.010	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.024		ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		Carbamazepine**	4.3E-04	I	ug/L	P322600	
		Silvex	0.0040	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	0.0012	I	ug/L	P322600	

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: CORAL GABLES CANAL

Collection Date/Time: 03/29/2017 11:30

Field ID: G4SE0096

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884506	EPA 180.1 Rev. 2.0	Turbidity	2.7	A	NTU	P322542	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P323032	
		Sulfate	7.7		mg SO4/L	P323035	
	SM 2120 B	Color (true)	16		PCU	P322521	
	SM 2320 B-97	Total Alkalinity	174		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	264		mg/L	P323098	
	SM 2540 D-97	TSS	4	I	mg/L	P322875	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P323006	
1884511	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P322670	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P322582	
1884516	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322535	
1884544	EPA 8321B	Sucralose**	1.5		ug/L	P322428	
	USGS O-2060-01	2,4-D	0.0072	I	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		2,4,5-T	0.0040	U	ug/L	P322600	
		Acifluorfen	0.010	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0090	I	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		Carbamazepine**	0.0074		ug/L	P322600	
		Silvex	0.0040	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	6.6E-04	I	ug/L	P322600	

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: C6 @ NW 118TH AVE

Collection Date/Time: 03/29/2017 12:30

Field ID: G4SE0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884518	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P322542	
	EPA 300.0 Rev. 2.1	Chloride	73		mg Cl/L	P323033	
		Sulfate	2.6		mg SO4/L	P323036	
	SM 2120 B	Color (true)	40	A	PCU	P322522	
	SM 2320 B-97	Total Alkalinity	231		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	374	A	mg/L	P323099	
	SM 2540 D-97	TSS	2	U	mg/L	P322876	
1884520	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P323006	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P322671	
1884522	SM 5310 B-00	Organic Carbon	14		mg C/L	P322582	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322535	
1884546	EPA 200.7 Rev. 4.4	Calcium	72.0		mg/L	P322663	
		Iron	140		ug/L	P322663	
		Magnesium	12.7		mg/L	P322663	
		Potassium	3.2		mg/L	P322663	
		Sodium	46.6		mg/L	P322663	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P322663	
		Arsenic	0.82		ug/L	P322663	
		Cadmium	0.020	U	ug/L	P322663	
		Chromium	0.40	U	ug/L	P322663	
		Copper	0.20	U	ug/L	P322663	
		Lead	0.050	U	ug/L	P322663	
		Nickel	0.25	I	ug/L	P322663	
		Selenium	0.20	U	ug/L	P322663	
		Silver	0.010	U	ug/L	P322663	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: C6/MIAMI CANAL (WEST)

Collection Date/Time: 03/29/2017 12:45

Field ID: G4SE0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884519	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P322542	
	EPA 300.0 Rev. 2.1	Chloride	73		mg Cl/L	P323033	
		Sulfate	2.6		mg SO4/L	P323036	
	SM 2120 B	Color (true)	41		PCU	P322522	
	SM 2320 B-97	Total Alkalinity	226		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	373		mg/L	P323099	
	SM 2540 D-97	TSS	2	U	mg/L	P322876	
1884520	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P323006	

Field ID: G4SE0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884521	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P322671	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P322582	
1884523	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322535	
1884547	EPA 200.7 Rev. 4.4	Calcium	72.0		mg/L	P322663	
		Iron	150		ug/L	P322663	
		Magnesium	12.5		mg/L	P322663	
		Potassium	3.2		mg/L	P322663	
		Sodium	46.5		mg/L	P322663	
		Zinc	5.0	U	ug/L	P322663	
	EPA 200.8 Rev. 5.4	Arsenic	0.77		ug/L	P322663	
		Cadmium	0.020	U	ug/L	P322663	
		Chromium	0.40	U	ug/L	P322663	
		Copper	0.20	I	ug/L	P322663	
		Lead	0.050	U	ug/L	P322663	
		Nickel	0.23	I	ug/L	P322663	
		Selenium	0.20	U	ug/L	P322663	
		Silver	0.010	U	ug/L	P322663	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: SNAKE CREEK CANAL (EAST)

Collection Date/Time: 03/29/2017 13:15

Field ID: 28040381

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884507	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P322542	
	EPA 300.0 Rev. 2.1	Chloride	76		mg Cl/L	P323032	
		Sulfate	1.6		mg SO4/L	P323035	
	SM 2120 B	Color (true)	39		PCU	P322522	
	SM 2320 B-97	Total Alkalinity	225		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	367		mg/L	P323099	
	SM 2540 D-97	TSS	2	U	mg/L	P322876	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P323006	
1884512	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P322501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P322565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P322572	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P322670	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P322582	
1884517	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322535	
1884545	EPA 8321B	Sucralose**	0.012	I	ug/L	P322428	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	

Field ID: 28040381

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884545	USGS O-2060-01	Fenuron	0.0080	U	ug/L	P322600	MS
		2,4,5-T	0.0040	U	ug/L	P322600	
		Acifluorfen	0.010	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.069		ug/L	P322600	
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Silvex	0.0040	U	ug/L	P322600	RPD
		Primidone**	0.0080	U	ug/L	P322600	
		Fluridone**	6.7E-04	I	ug/L	P322600	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P322541

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P322542

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P322663

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P322663

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
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323036

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322501

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322565

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322572

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322670

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322671

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: P322534

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

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

Reference Method: EPA 8321B
Batch ID: P322428

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P322521

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P322522

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P323003

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

Reference Method: SM 2540 C-97
Batch ID: P323098

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P323099

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322875

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P322876

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P322582

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

Reference Method: USGS O-2060-01
Batch ID: P322600

Component	Result	Code	Units
2,4,5-T	0.0040	U	ug/L
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Acifluorfen	0.010	U	ug/L
Bentazon	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
Silvex	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	102		P	85 - 115
Sodium	102		P	85 - 115
Zinc	99.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	93.7		P	85 - 115
Chromium	96.6		P	85 - 115
Copper	95.4		P	85 - 115
Lead	99.2		P	85 - 115
Nickel	97.6		P	85 - 115
Selenium	97.0		P	85 - 115
Silver	98.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323036

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322565

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322671

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322534

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

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

Reference Method: EPA 8321B
Batch ID: P322428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	69.6		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P323003

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

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P322582

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.9		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	81.6		P	40 - 140
2,4-D	104		P	40 - 140
Acetaminophen	53.2		P	40 - 140
Acifluorfen	68.8		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P322600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	83.6		P	40 - 140
Carbamazepine	121		P	40 - 140
Diuron	87.6		P	40 - 140
Fenuron	98.0		P	40 - 140
Fluridone	75.6		P	40 - 140
Imidacloprid	85.6		P	40 - 160
Linuron	92.4		P	40 - 140
Primidone	86.8		P	40 - 140
Silvex	80.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884303	Calcium	100		P	80 - 120
1884303	Iron	104		P	80 - 120
1884303	Magnesium	101		P	80 - 120
1884303	Potassium	101		P	80 - 120
1884303	Sodium	102		P	80 - 120
1884303	Zinc	98.8		P	80 - 120
1884721	Calcium	99.5		P	80 - 120
1884721	Iron	103	104	P/P	80 - 120
1884721	Magnesium	98.4		P	80 - 120
1884721	Potassium	103	103	P/P	80 - 120
1884721	Sodium	101		P	80 - 120
1884721	Zinc	96.8	98.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884303	Arsenic	96.6		P	80 - 120
1884303	Cadmium	92.5		P	80 - 120
1884303	Chromium	95.1		P	80 - 120
1884303	Copper	92.2		P	80 - 120
1884303	Lead	97.9		P	80 - 120
1884303	Nickel	93.6		P	80 - 120
1884303	Selenium	93.9		P	80 - 120
1884303	Silver	98.1		P	80 - 120
1884721	Arsenic	98.8	97.2	P/P	80 - 120
1884721	Cadmium	96.3	95.2	P/P	80 - 120
1884721	Chromium	98.1	96.7	P/P	80 - 120
1884721	Copper	92.9	92.5	P/P	80 - 120
1884721	Lead	98.3	98.3	P/P	80 - 120
1884721	Nickel	95.4	94.0	P/P	80 - 120
1884721	Selenium	96.6	98.6	P/P	80 - 120
1884721	Silver	99.2	98.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884258	Chloride	101		P	90 - 110
1884348	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884623	Chloride	102		P	90 - 110
1884697	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884258	Sulfate	98.5		P	90 - 110
1884348	Sulfate	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884623	Sulfate	101		P	90 - 110
1884697	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884472	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884473	Kjeldahl Nitrogen	107	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884510	NO2NO3-N	99.3	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884511	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322671

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884573	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884421	O-Phosphate-P	96.8	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884516	O-Phosphate-P	97.6	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P322428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884451	Sucralose	83.0	88.0	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884504	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884420	Organic Carbon	99.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884497	2,4,5-T	86.8	89.6	P/P	40 - 140
1884497	2,4-D	109	103	P/P	40 - 140
1884497	Acetaminophen	70.8	55.6	P/P	40 - 140
1884497	Acifluorfen	126	116	P/P	40 - 140
1884497	Bentazon	160	160	F/F	40 - 140
1884497	Carbamazepine	83.2	102	P/P	40 - 140
1884497	Diuron	81.6	73.2	P/P	40 - 140
1884497	Fenuron	89.2	82.0	P/P	40 - 140
1884497	Fluridone	85.2	71.6	P/P	40 - 140
1884497	Imidacloprid	102	85.6	P/P	40 - 160
1884497	Linuron	74.0	87.6	P/P	40 - 140
1884497	Primidone	92.4	65.6	P/P	40 - 140
1884497	Silvex	102	93.6	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884426	Turbidity	8.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884506	Turbidity	2.22	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P322663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884721	Calcium	0.503	Spike	P	0 - 20
1884721	Iron	1.04	Spike	P	0 - 20
1884721	Magnesium	0.507	Spike	P	0 - 20
1884721	Potassium	0.382	Spike	P	0 - 20
1884721	Sodium	1.06	Spike	P	0 - 20
1884721	Zinc	1.24	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P322663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884721	Arsenic	1.61	Spike	P	0 - 20
1884721	Cadmium	1.16	Spike	P	0 - 20
1884721	Chromium	1.34	Spike	P	0 - 20
1884721	Copper	0.431	Spike	P	0 - 20
1884721	Lead	0.0289	Spike	P	0 - 20
1884721	Nickel	1.40	Spike	P	0 - 20
1884721	Selenium	1.98	Spike	P	0 - 20
1884721	Silver	0.429	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884258	Chloride	0.0733	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884697	Chloride	0.409	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884258	Sulfate	0.775	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884472	Ammonia-N	1.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884473	Kjeldahl Nitrogen	0.716	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884510	NO2NO3-N	0.468	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884511	Total-P	0.801	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884573	Total-P	0.164	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884421	O-Phosphate-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884516	O-Phosphate-P	1.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P322428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884451	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P322521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884470	Color (true)	0.271	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884518	Color (true)	1.46	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P323003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884504	Total Alkalinity	0.300	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884505	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P323099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884518	TDS	1.34	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884504	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P322582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884420	Organic Carbon	0.0206	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P322600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884497	2,4,5-T	3.17	Spike	P	0 - 30
1884497	2,4-D	5.28	Spike	P	0 - 30
1884497	Acetaminophen	24.1	Spike	P	0 - 30
1884497	Acifluorfen	8.24	Spike	P	0 - 30
1884497	Bentazon	0.250	Spike	P	0 - 30
1884497	Carbamazepine	20.3	Spike	P	0 - 30
1884497	Diuron	10.9	Spike	P	0 - 30
1884497	Fenuron	8.41	Spike	P	0 - 30
1884497	Fluridone	17.3	Spike	P	0 - 30
1884497	Imidacloprid	17.9	Spike	P	0 - 30
1884497	Linuron	16.8	Spike	P	0 - 30
1884497	Primidone	33.9	Spike	F	0 - 30
1884497	Silvex	8.20	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: 1884541
Field Sample ID: G4SECD09

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	83.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	99.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	66.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	95.8	P	40 - 160
USGS O-2060-01	Diuron-d6	70.2	P	40 - 150
USGS O-2060-01	Primidone-d5	101	P	40 - 150

Lab Sample ID: 1884542
Field Sample ID: G4SECD09_DUPE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	91.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	92.6	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	62.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	90.4	P	40 - 160
USGS O-2060-01	Diuron-d6	73.6	P	40 - 150
USGS O-2060-01	Primidone-d5	82.8	P	40 - 150

Lab Sample ID: 1884543
Field Sample ID: G4SE0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	84.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	99.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	57.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	62.6	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1884543
Field Sample ID: G4SE0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Diuron-d6	44.2	P	40 - 150
USGS O-2060-01	Primidone-d5	64.6	P	40 - 150

Lab Sample ID: 1884544
Field Sample ID: G4SE0096

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	70.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	106	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	57.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	78.8	P	40 - 160
USGS O-2060-01	Diuron-d6	59.2	P	40 - 150
USGS O-2060-01	Primidone-d5	83.8	P	40 - 150

Lab Sample ID: 1884545
Field Sample ID: 28040381

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	67.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	107	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	59.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	53.4	P	40 - 160
USGS O-2060-01	Diuron-d6	44.6	P	40 - 150
USGS O-2060-01	Primidone-d5	64.8	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75470
Included Lab Sample IDs: 1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110
Ammonia-N	105	104	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A75477
Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75479
Included Lab Sample IDs: 1884513, 1884514, 1884515, 1884516, 1884517, 1884522, 1884523

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75479

Included Lab Sample IDs: 1884513, 1884514, 1884515, 1884516, 1884517, 1884522, 1884523

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75482

Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A75484

Included Lab Sample IDs: 1884541, 1884542, 1884543, 1884544, 1884545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	100	P/P	60 - 150
Sucralose	82.9	63.4	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75490

Included Lab Sample IDs: 1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

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

Reference Method: SM 5310 B-00

Run ID: A75496

Included Lab Sample IDs: 1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	97.6	P/P	90 - 110
Organic Carbon	97.4	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75543

Included Lab Sample IDs: 1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	103	P/P	90 - 110
Kjeldahl Nitrogen	98.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75554

Included Lab Sample IDs: 1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75569

Included Lab Sample IDs: 1884546, 1884547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.7	95.5	P/P	90 - 110
Cadmium	95.2	94.5	P/P	90 - 110
Chromium	97.8	98.6	P/P	90 - 110
Copper	99.3	96.0	P/P	90 - 110
Lead	98.7	97.8	P/P	90 - 110
Nickel	99.3	96.4	P/P	90 - 110
Selenium	96.8	95.0	P/P	90 - 110
Silver	96.9	95.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A75593

Included Lab Sample IDs: 1884546, 1884547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.8	P/P	90 - 110
Calcium	99.8	98.8	P/P	90 - 110
Iron	98.6	100	P/P	90 - 110
Iron	98.9	98.6	P/P	90 - 110
Magnesium	98.6	99.8	P/P	90 - 110
Magnesium	99.3	98.6	P/P	90 - 110
Potassium	98.3	100	P/P	90 - 110
Potassium	99.2	98.3	P/P	90 - 110
Sodium	98.7	98.9	P/P	90 - 110
Sodium	99.0	98.7	P/P	90 - 110
Zinc	101	99.7	P/P	90 - 110
Zinc	99.5	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75665

Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	107	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75665

Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75672

Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Chloride	104	103	P/P	90 - 110
Sulfate	102	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75672

Included Lab Sample IDs: 1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519

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

Reference Method: USGS O-2060-01

Run ID: A75682

Included Lab Sample IDs: 1884541, 1884542, 1884543, 1884544, 1884545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	109	99.6	P/P	60 - 150
Carbamazepine	119	121	P/P	60 - 150
Diuron	122	120	P/P	60 - 150
Fenuron	119	114	P/P	60 - 150
Fluridone	112	116	P/P	60 - 150
Imidacloprid	100	108	P/P	60 - 150
Linuron	86.8	132	P/P	60 - 150
Primidone	106	105	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A75705

Included Lab Sample IDs: 1884541, 1884542, 1884543, 1884544, 1884545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	94.6	99.8	P/P	50 - 150
2,4-D	132	110	P/P	50 - 150
Acifluorfen	89.0	114	P/P	50 - 150
Bentazon	81.2	147	P/P	50 - 150
Silvex	87.2	87.2	P/P	50 - 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						8.28	
	Turbidity						2.22	
EPA 200.7 Rev. 4.4	Calcium	102		100	99.5			0.503
	Iron	104		104	103	104		1.04
	Magnesium	103		101	98.4			0.507
	Potassium	102		101	103	103		0.382
	Sodium	102		102	101			1.06
	Zinc	99.7		98.8	96.8	98.0		1.24
EPA 200.8 Rev. 5.4	Arsenic	96.9		96.6	98.8	97.2		1.61
	Cadmium	93.7		92.5	96.3	95.2		1.16
	Chromium	96.6		95.1	98.1	96.7		1.34
	Copper	95.4		92.2	92.9	92.5		0.431
	Lead	99.2		97.9	98.3	98.3		0.0289
	Nickel	97.6		93.6	95.4	94.0		1.40

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.8 Rev. 5.4	Selenium	97.0	93.9	96.6	98.6		1.98
	Silver	98.1	98.1	99.2	98.8		0.429
EPA 300.0 Rev. 2.1	Chloride	101	101	101		0.0733	
	Chloride	103	103	102		0.409	
	Sulfate	99.4	98.5	99.0		0.775	
	Sulfate	101	101	101			
EPA 350.1 Rev. 2.0	Ammonia-N	108	107	106			1.35
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.4	107	108			0.716
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.3	99.8			0.468
EPA 365.1 Rev. 2.0	Total-P	97.8	106	105			0.801
	Total-P	104	104	104			0.164
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	96.8	98.3			1.54
	O-Phosphate-P	98.2	97.6	98.7			1.12
EPA 8321B	Sucralose	69.6	83.0	88.0			2.51
SM 2120 B	Color (true)					0.271	
	Color (true)					1.46	
SM 2320 B-97	Total Alkalinity	104				0.300	
SM 2540 C-97	TDS					0.0	
	TDS					1.34	
SM 4500 F-C-97	Fluoride	96.4	101	101			0.0
SM 5310 B-00	Organic Carbon	99.9	99.6				0.0206
USGS O-2060-01	2,4,5-T	81.6	86.8	89.6			3.17
	2,4-D	104	109	103			5.28
	Acetaminophen	53.2	70.8	55.6			24.1
	Acifluorfen	68.8	126	116			8.24
	Bentazon	83.6	160	160			0.250
	Carbamazepine	121	83.2	102			20.3
	Diuron	87.6	81.6	73.2			10.9
	Fenuron	98.0	89.2	82.0			8.41
	Fluridone	75.6	85.2	71.6			17.3
	Imidacloprid	85.6	102	85.6			17.9
	Linuron	92.4	74.0	87.6			16.8
	Primidone	86.8	92.4	65.6			33.9
	Silvex	80.8	102	93.6			8.20

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1884546, 1884547
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1884546, 1884547
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1884513, 1884514, 1884515, 1884516, 1884517, 1884522, 1884523
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1884541, 1884542, 1884543, 1884544, 1884545
SM 2120 B / E31780	True Color measured at 450 nm	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1884541, 1884542, 1884543, 1884544, 1884545
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1884541, 1884542, 1884543, 1884544, 1884545

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	03/30/2017			03/30/2017 15:54	Blanca Fach	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
EPA 200.7 Rev. 4.4	03/30/2017	04/03/2017	Elliott D. Healy	04/05/2017	Martin Acosta	1884546, 1884547
EPA 200.8 Rev. 5.4	03/30/2017	04/03/2017	Elliott D. Healy	04/04/2017	Betina Topolski	1884546, 1884547
EPA 300.0 Rev. 2.1	03/30/2017			04/08/2017	Ping Hua	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
EPA 350.1 Rev. 2.0	03/30/2017			03/30/2017	Julie Michelle Frank	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 351.2 Rev. 2.0	03/30/2017	03/31/2017	Adrian Shelby	04/04/2017	Joseph Suarez	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 353.2 Rev. 2.0	03/30/2017			03/31/2017	Beverly Y. Sanders	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 365.1 Rev. 2.0	03/30/2017	04/03/2017	Vijayalakshmi Reddy	04/04/2017	Lipi Saha	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
EPA 365.1 Rev. 2.0 dissolved	03/30/2017			03/30/2017 15:37	Anthony C. Onicha	1884516
	03/30/2017			03/30/2017 16:10	Anthony C. Onicha	1884513
	03/30/2017			03/30/2017 16:11	Anthony C. Onicha	1884514
	03/30/2017			03/30/2017 16:12	Anthony C. Onicha	1884515
	03/30/2017			03/30/2017 16:13	Anthony C. Onicha	1884517
	03/30/2017			03/30/2017 16:14	Anthony C. Onicha	1884522
	03/30/2017			03/30/2017 16:15	Anthony C. Onicha	1884523
EPA 8321B	03/30/2017	03/30/2017	Mohammad Ghaffari	03/30/2017	Mohammad Ghaffari	1884541, 1884542, 1884543, 1884544, 1884545
SM 2120 B	03/30/2017			03/30/2017 19:08	Julie Michelle Frank	1884503, 1884504
	03/30/2017			03/30/2017 19:09	Julie Michelle Frank	1884505
	03/30/2017			03/30/2017 19:10	Julie Michelle Frank	1884506
	03/30/2017			03/30/2017 19:13	Julie Michelle Frank	1884507
	03/30/2017			03/30/2017 19:14	Julie Michelle Frank	1884518
	03/30/2017			03/30/2017 19:15	Julie Michelle Frank	1884519
SM 2320 B-97	03/30/2017			04/07/2017	Dale L. Simmons	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 2540 C-97	03/30/2017			04/03/2017	Sima Feizi	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 2540 D-97	03/30/2017			04/03/2017	Sima Feizi	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 4500 F-C-97	03/30/2017			04/07/2017	Dale L. Simmons	1884503, 1884504, 1884505, 1884506, 1884507, 1884518, 1884519
SM 5310 B-00	03/30/2017			03/30/2017	Julie Michelle Frank	1884508, 1884509, 1884510, 1884511, 1884512, 1884520, 1884521
USGS O-2060-01	03/30/2017	04/03/2017	Hoor Shaik	04/08/2017	Juyoung Kim	1884541, 1884542, 1884543, 1884544, 1884545
	03/30/2017	04/03/2017	Hoor Shaik	04/10/2017	Juyoung Kim	1884541, 1884542, 1884543, 1884544, 1884545