

Chemical Analysis Report

CEN-DIST-2019-01-30-01

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

Event Description: **Rose / Spruce / Strick / UnBranch / Groover**
Request ID: **RQ-2019-01-28-39**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 26-FEB-2019 17:07

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: UNNAMED BRANCH @ 60M UPSTREAM OF
 AIRPORT ROAD**

Collection Date/Time: 01/29/2019 11:26

Field ID: G5CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058259	EPA 8321B	2,4-D	0.0020	U	ug/L	P358107	
		Sucralose**	0.11		ug/L	P358147	
		Bentazon	0.080		ug/L	P358107	
		MCP	0.0023	I	ug/L	P358107	
		Triclopyr**	0.0040	U	ug/L	P358107	
		Imidacloprid	0.012	J	ug/L	P358107	MS
		Diuron	0.0020	U	ug/L	P358107	
		Pyraclostrobin**	0.0020	U	ug/L	P358107	
		Primidone**	0.0040	U	ug/L	P358107	
		Linuron	0.0040	U	ug/L	P358107	
		Acetaminophen**	0.0080	U	ug/L	P358107	
		Fenuron	0.016	U	ug/L	P358107	
		Imazapyr**	0.17		ug/L	P358107	
		Carbamazepine**	8.0E-04	U	ug/L	P358107	
		Fluridone**	0.045		ug/L	P358107	
		Hydrocodone**	0.0020	U	ug/L	P358107	
		Naproxen**	0.0080	U	ug/L	P358107	
		Ibuprofen**	0.020	U	ug/L	P358107	
		Glyphosate**	0.11	I	ug/L	P358147	
		AMPA**	0.10	U	ug/L	P358147	
		Endothall**	0.25	U	ug/L	P358147	
		Glufosinate**	0.10	U	ug/L	P358147	
		Acesulfame K**	0.10	U	ug/L	P358147	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: SPRUCE CREEK @ 0.68 MILES UPSTREAM OF RR BRIDGE **Collection Date/Time: 01/29/2019 14:15**

Field ID: G5CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058182	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P358076	
	EPA 300.0	Bromide	0.50		mg Br/L	P358168	
	SM 2320 B-97	Total Alkalinity	62		mg CaCO3/L	P358555	
	SM 2540 D-97	TSS	6	I	mg/L	P358710	
	SM 4500 F-C-97	Fluoride	0.089	I	mg F/L	P358558	
2058186	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P358466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P358191	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P358113	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P358225	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P358266	
2058190	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P358071	
2058268	EPA 200.7 Rev. 4.4	Iron	710		ug/L	P358299	
		Manganese	8.5		ug/L	P358299	
		Zinc	5.0	U	ug/L	P358299	
	EPA 200.8 Rev. 5.4	Aluminum	353		ug/L	P358299	
		Antimony	0.11	I	ug/L	P358953	
		Arsenic	1.35		ug/L	P358299	
		Cadmium	0.020	U	ug/L	P358299	
		Chromium	0.88	I	ug/L	P358299	
		Copper	3.26		ug/L	P358299	
		Lead	0.48		ug/L	P358299	
		Nickel	0.50	U	ug/L	P358299	
		Selenium	0.20	U	ug/L	P358299	
		Silver	0.010	U	ug/L	P358299	
		Thallium	0.10	U	ug/L	P358299	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SPRUCE CREEK @ 500M UPSTREAM OF RR BRIDGE

Collection Date/Time: 01/29/2019 14:04

Field ID: G5CE0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058183	EPA 180.1 Rev. 2.0	Turbidity	9.3		NTU	P358076	
	EPA 300.0	Bromide	0.62		mg Br/L	P358168	
	SM 2320 B-97	Total Alkalinity	65		mg CaCO3/L	P358555	
	SM 2540 D-97	TSS	9	I	mg/L	P358711	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P358558	
2058187	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P358466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P358191	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P358113	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P358226	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P358266	
2058191	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P358072	
2058269	EPA 200.7 Rev. 4.4	Iron	810		ug/L	P358299	
		Manganese	9.1		ug/L	P358299	
		Zinc	5.0	U	ug/L	P358299	
	EPA 200.8 Rev. 5.4	Aluminum	370		ug/L	P358299	
		Antimony	0.11	I	ug/L	P358953	
		Arsenic	1.41		ug/L	P358299	
		Cadmium	0.020	U	ug/L	P358299	
		Chromium	0.96	I	ug/L	P358299	
		Copper	3.42		ug/L	P358299	
		Lead	0.53		ug/L	P358299	
		Nickel	0.50	U	ug/L	P358299	
		Selenium	0.20	U	ug/L	P358299	
		Silver	0.010	U	ug/L	P358299	
		Thallium	0.10	U	ug/L	P358299	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ROSE BAY @ 125M NE OF BOAT RAMP

Collection Date/Time: 01/29/2019 12:26

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058176	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P358076	
	EPA 300.0	Bromide	34		mg Br/L	P358168	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P358272	
	SM 2540 D-97	TSS	4	IA	mg/L	P358712	
	SM 4500 F-C-97	Fluoride	0.72		mg F/L	P358275	
2058178	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P358209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P358276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P358176	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P358227	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P358268	
2058180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P358073	
2058257	EPA 8321B	2,4-D	0.0079	I	ug/L	P358107	
		Sucralose**	0.67		ug/L	P358147	
		Bentazon	0.047		ug/L	P358107	
		MCP	0.0020	U	ug/L	P358107	
		Triclopyr**	0.0040	U	ug/L	P358107	
		Imidacloprid	0.011		ug/L	P358107	MS
		Diuron	0.0033	I	ug/L	P358107	
		Pyraclostrobin**	0.0020	U	ug/L	P358107	
		Primidone**	0.0053	I	ug/L	P358107	
		Linuron	0.0040	U	ug/L	P358107	
		Acetaminophen**	0.0080	U	ug/L	P358107	
		Fenuron	0.016	U	ug/L	P358107	
		Imazapyr**	0.089		ug/L	P358107	
		Carbamazepine**	0.0030	I	ug/L	P358107	
		Fluridone**	0.0082		ug/L	P358107	
		Hydrocodone**	0.0020	U	ug/L	P358107	
		Naproxen**	0.0080	U	ug/L	P358107	
		Ibuprofen**	0.020	U	ug/L	P358107	
		Glyphosate**	0.10	UJ	ug/L	P358147	SUR
		AMPA**	0.10	UJ	ug/L	P358147	SUR
		Endothall**	0.25	U	ug/L	P358147	
		Glufosinate**	0.10	UJ	ug/L	P358147	SUR
		Acesulfame K**	0.10	U	ug/L	P358147	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Results confirmed in re-extraction.

Sample Location: ROSE BAY @ 200M E OF BOAT RAMP

Collection Date/Time: 01/29/2019 12:36

Field ID: G5CE0098

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058177	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P358076	
	EPA 300.0	Bromide	32		mg Br/L	P358168	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P358272	
	SM 2540 D-97	TSS	3	U	mg/L	P358712	
	SM 4500 F-C-97	Fluoride	0.67		mg F/L	P358275	
2058179	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P358209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P358276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P358176	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P358227	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P358670	
2058181	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P358073	
2058258	EPA 8321B	2,4-D	0.0095		ug/L	P358107	
		Sucralose**	0.67		ug/L	P358147	
		Bentazon	0.057		ug/L	P358107	
		MCP	0.0020	U	ug/L	P358107	
		Triclopyr**	0.0040	U	ug/L	P358107	
		Imidacloprid	0.012		ug/L	P358107	MS
		Diuron	0.0030	I	ug/L	P358107	
		Pyraclostrobin**	0.0020	U	ug/L	P358107	
		Primidone**	0.0062	I	ug/L	P358107	
		Linuron	0.0040	U	ug/L	P358107	
		Acetaminophen**	0.0080	U	ug/L	P358107	
		Fenuron	0.016	U	ug/L	P358107	
		Imazapyr**	0.12		ug/L	P358107	
		Carbamazepine**	0.0028	I	ug/L	P358107	
		Fluridone**	0.010		ug/L	P358107	
		Hydrocodone**	0.0020	U	ug/L	P358107	
		Naproxen**	0.0080	U	ug/L	P358107	
		Ibuprofen**	0.020	U	ug/L	P358107	
		Glyphosate**	0.10	UJ	ug/L	P358147	SUR
		AMPA**	0.10	UJ	ug/L	P358147	SUR
		Endothall**	0.25	U	ug/L	P358147	
		Glufosinate**	0.10	UJ	ug/L	P358147	SUR
		Acesulfame K**	0.10	U	ug/L	P358147	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Results confirmed in re-extraction.

**Sample Location: STRICKLAND BAY @ 100M EAST
(DOWNSTREAM) OF RR CROSSING**

Collection Date/Time: 01/29/2019 13:35

Field ID: G5CE0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058184	EPA 180.1 Rev. 2.0	Turbidity	10	A	NTU	P358076	
	EPA 300.0	Bromide	2.2		mg Br/L	P358168	
	SM 2320 B-97	Total Alkalinity	70		mg CaCO3/L	P358555	
	SM 2540 D-97	TSS	8	I	mg/L	P358711	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P358558	
2058188	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P358466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P358182	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P358113	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P358226	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P358328	
2058192	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P358072	
2058270	EPA 200.7 Rev. 4.4	Iron	670		ug/L	P358299	
		Manganese	9.5		ug/L	P358299	
		Zinc	5.0	U	ug/L	P358299	
	EPA 200.8 Rev. 5.4	Aluminum	469	J	ug/L	P359161	
		Antimony	0.11	I	ug/L	P358953	
		Arsenic	1.49		ug/L	P358299	
		Cadmium	0.020	U	ug/L	P358299	
		Chromium	0.71	I	ug/L	P358299	
		Copper	3.07		ug/L	P358299	
		Lead	0.47		ug/L	P358299	
		Nickel	0.50	U	ug/L	P358299	
		Selenium	0.20	U	ug/L	P358299	
		Silver	0.010	U	ug/L	P358299	
		Thallium	0.10	U	ug/L	P358299	

Ref. Method and Comment:

EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The sample was digested and analyzed three times and it appears to be heterogeneous with respect to aluminum.

**Sample Location: STRICKLAND BAY @ 525M EAST
(DOWNSTREAM) OF RR CROSSING**

Collection Date/Time: 01/29/2019 13:47

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058185	EPA 180.1 Rev. 2.0	Turbidity	9.1		NTU	P358076	
	EPA 300.0	Bromide	2.5		mg Br/L	P358982	
	SM 2320 B-97	Total Alkalinity	71		mg CaCO3/L	P358555	
	SM 2540 D-97	TSS	5	IA	mg/L	P358711	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P358558	
2058189	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P358209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P358276	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P358177	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P358227	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P358328	
2058193	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P358073	
2058271	EPA 200.7 Rev. 4.4	Iron	760		ug/L	P358299	
		Manganese	9.6		ug/L	P358299	
		Zinc	5.0	U	ug/L	P358299	
	EPA 200.8 Rev. 5.4	Aluminum	324		ug/L	P358299	
		Antimony	0.10	I	ug/L	P358953	
		Arsenic	1.50		ug/L	P358299	
		Cadmium	0.020	U	ug/L	P358299	
		Chromium	0.86	I	ug/L	P358299	
		Copper	3.08		ug/L	P358299	
		Lead	0.48		ug/L	P358299	
		Nickel	0.50	U	ug/L	P358299	
		Selenium	0.20	U	ug/L	P358299	
		Silver	0.010	U	ug/L	P358299	
		Thallium	0.10	U	ug/L	P358299	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: UNNAMED BRANCH @ BEAR CREEK PATH

Collection Date/Time: 01/29/2019 11:13

Field ID: G5CE0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058285	EPA 8321B	2,4-D	0.0020	U	ug/L	P358107	
		Sucralose**	0.24		ug/L	P358147	
		Bentazon	0.11		ug/L	P358107	
		MCP	0.0024	I	ug/L	P358107	
		Triclopyr**	0.0040	U	ug/L	P358107	
		Imidacloprid	0.014		ug/L	P358107	MS
		Diuron	0.0022	I	ug/L	P358107	
		Pyraclostrobin**	0.0020	U	ug/L	P358107	
		Primidone**	0.0040	U	ug/L	P358107	
		Linuron	0.0040	U	ug/L	P358107	
		Acetaminophen**	0.0080	U	ug/L	P358107	
		Fenuron	0.016	U	ug/L	P358107	
		Imazapyr**	0.13		ug/L	P358107	
		Carbamazepine**	8.0E-04	U	ug/L	P358107	
		Fluridone**	0.089		ug/L	P358107	
		Hydrocodone**	0.0020	U	ug/L	P358107	
		Naproxen**	0.0080	U	ug/L	P358107	
		Ibuprofen**	0.020	U	ug/L	P358107	
		Glyphosate**	0.22	I	ug/L	P358147	
		AMPA**	0.10	U	ug/L	P358147	
		Endothall**	0.25	U	ug/L	P358147	
		Glufosinate**	0.10	U	ug/L	P358147	
		Acesulfame K**	0.10	U	ug/L	P358147	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358076

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358299

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358299

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358953

Component	Result	Code	Units
Antimony	0.050	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359161

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Reference Method: EPA 300.0
Batch ID: P358168

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P358982

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358209

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358466

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358182

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358276

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358113

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358176

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358177

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: P358225

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
Batch ID: P358226

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358227

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358073

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

Reference Method: EPA 8321B
Batch ID: P358107

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P358147

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358147

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P358272

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

Reference Method: SM 2320 B-97
Batch ID: P358555

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

Reference Method: SM 2540 D-97
Batch ID: P358710

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358711

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358712

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P358275

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P358558

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P358266

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

Reference Method: SM 5310 B-00
Batch ID: P358268

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

Reference Method: SM 5310 B-00
Batch ID: P358328

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

Reference Method: SM 5310 B-00
Batch ID: P358670

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358299

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	110		P	85 - 115
Manganese	98.1		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358299

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	107		P	85 - 115
Arsenic	108		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	99.0		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Silver	105		P	85 - 115
Thallium	96.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P358168

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

Reference Method: EPA 300.0
Batch ID: P358982

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358182

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358276

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358113

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358176

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358177

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: P358225

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358226

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P358227

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358073

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

Reference Method: EPA 8321B
 Batch ID: P358107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.9		P	40 - 150
Acetaminophen	85.2		P	30 - 150
Bentazon	94.7		P	30 - 150
Carbamazepine	90.6		P	40 - 150
Diuron	76.1		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	93.0		P	40 - 150
Hydrocodone	87.6		P	40 - 150
Ibuprofen	87.0		P	40 - 150
Imazapyr	87.2		P	40 - 150
Imidacloprid	87.1		P	40 - 160
Linuron	74.1		P	40 - 150
MCPP	91.2		P	40 - 150
Naproxen	70.7		P	40 - 150
Primidone	84.8		P	40 - 150
Pyraclostrobin	71.0		P	40 - 150
Triclopyr	65.5		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P358147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	102		P	40 - 150
Endothall	87.7		P	40 - 150
Glufosinate	69.8		P	40 - 150
Glyphosate	86.0		P	40 - 140
Sucralose	80.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P358272

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

Reference Method: SM 2320 B-97
Batch ID: P358555

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

Reference Method: SM 4500 F-C-97
Batch ID: P358275

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

Reference Method: SM 4500 F-C-97
Batch ID: P358558

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

Reference Method: SM 5310 B-00
Batch ID: P358266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P358268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P358328

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

Reference Method: SM 5310 B-00
Batch ID: P358670

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058022	Iron	113		P	80 - 120
2058022	Manganese	96.0		P	80 - 120
2058022	Zinc	115		P	80 - 120
2058118	Iron	105	109	P/P	80 - 120
2058118	Manganese	103	107	P/P	80 - 120
2058118	Zinc	104	108	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058022	Aluminum	95.3		P	80 - 120
2058022	Arsenic	112		P	80 - 120
2058022	Cadmium	108		P	80 - 120
2058022	Chromium	103		P	80 - 120
2058022	Copper	103		P	80 - 120
2058022	Lead	105		P	80 - 120
2058022	Nickel	104		P	80 - 120
2058022	Selenium	105		P	80 - 120
2058022	Silver	105		P	80 - 120
2058022	Thallium	104		P	80 - 120
2058118	Aluminum	100	102	P/P	80 - 120
2058118	Arsenic	109	109	P/P	80 - 120
2058118	Cadmium	107	107	P/P	80 - 120
2058118	Chromium	98.2	96.3	P/P	80 - 120
2058118	Copper	95.9	97.0	P/P	80 - 120
2058118	Lead	102	102	P/P	80 - 120
2058118	Nickel	96.3	96.3	P/P	80 - 120
2058118	Selenium	84.3	83.8	P/P	80 - 120
2058118	Silver	105	104	P/P	80 - 120
2058118	Thallium	100	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058063	Antimony	110	109	P/P	80 - 120
2058090	Antimony	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062315	Aluminum	99.6	102	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P358168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058121	Bromide	92.8	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P358982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058620	Bromide	96.0		P	90 - 110
2061372	Bromide	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058025	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058186	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057671	Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058078	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058083	Kjeldahl Nitrogen	104	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058186	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058080	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058857	NO2NO3-N	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058125	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058416	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058082	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057964	O-Phosphate-P	95.5	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058198	O-Phosphate-P	94.7	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058037	O-Phosphate-P	95.4	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058259	2,4-D	106	116	P/P	40 - 150
2058259	Acetaminophen	115	110	P/P	30 - 150
2058259	Carbamazepine	85.0	83.8	P/P	40 - 150
2058259	Diuron	69.6	66.5	P/P	40 - 150
2058259	Fenuron	100	87.9	P/P	40 - 150
2058259	Fluridone	76.9	77.7	P/P	40 - 150
2058259	Hydrocodone	108	99.5	P/P	40 - 150
2058259	Ibuprofen	94.2	87.7	P/P	40 - 150
2058259	Imazapyr	84.9	84.8	P/P	40 - 150
2058259	Imidacloprid	173	159	F/P	40 - 160
2058259	Linuron	71.5	67.3	P/P	40 - 150
2058259	MCPP	130	138	P/P	40 - 150
2058259	Naproxen	75.2	81.3	P/P	40 - 150
2058259	Primidone	99.3	91.2	P/P	40 - 150
2058259	Pyraclostrobin	77.6	72.5	P/P	40 - 150
2058259	Triclopyr	84.8	96.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P358147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058244	Acesulfame K	74.3	73.1	P/P	40 - 150
2058244	AMPA	141	126	P/P	40 - 150
2058244	Endothall	94.0	97.1	P/P	40 - 150
2058244	Glufosinate	121	102	P/P	40 - 150
2058244	Glyphosate	136	111	P/P	40 - 140
2058244	Sucralose	91.5	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P358275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058033	Fluoride	95.9	96.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058019	Organic Carbon	98.7	96.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P358268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058007	Organic Carbon	95.3	97.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P358328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058470	Organic Carbon	94.6	97.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P358670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060038	Organic Carbon	98.5	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058184	Turbidity	13.5	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058118	Iron	3.58	Spike	P	0 - 20
2058118	Manganese	4.04	Spike	P	0 - 20
2058118	Zinc	3.81	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058118	Aluminum	2.20	Spike	P	0 - 20
2058118	Arsenic	0.170	Spike	P	0 - 20
2058118	Cadmium	0.231	Spike	P	0 - 20
2058118	Chromium	1.97	Spike	P	0 - 20
2058118	Copper	1.11	Spike	P	0 - 20
2058118	Lead	0.311	Spike	P	0 - 20
2058118	Nickel	0.0557	Spike	P	0 - 20
2058118	Selenium	0.580	Spike	P	0 - 20
2058118	Silver	1.34	Spike	P	0 - 20
2058118	Thallium	0.943	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058063	Antimony	0.515	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062315	Aluminum	2.55	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P358168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058121	Bromide	2.27	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0
Batch ID: P358982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058620	Bromide	0.790	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058025	Ammonia-N	0.689	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058186	Ammonia-N	0.279	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057671	Kjeldahl Nitrogen	0.459	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058078	Kjeldahl Nitrogen	0.381	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058083	Kjeldahl Nitrogen	4.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058186	NO2NO3-N	0.304	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058080	NO2NO3-N	0.509	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058857	NO2NO3-N	0.265	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058125	Total-P	0.416	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058416	Total-P	2.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058082	Total-P	0.726	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057964	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058198	O-Phosphate-P	2.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058037	O-Phosphate-P	1.46	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P358107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058259	2,4-D	8.71	Spike	P	0 - 30
2058259	Acetaminophen	4.43	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P358107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058259	Bentazon	2.13	Spike	P	0 - 30
2058259	Carbamazepine	1.46	Spike	P	0 - 30
2058259	Diuron	4.50	Spike	P	0 - 30
2058259	Fenuron	13.0	Spike	P	0 - 30
2058259	Fluridone	0.251	Spike	P	0 - 30
2058259	Hydrocodone	7.75	Spike	P	0 - 30
2058259	Ibuprofen	7.11	Spike	P	0 - 30
2058259	Imazapyr	0.0143	Spike	P	0 - 30
2058259	Imidacloprid	7.59	Spike	P	0 - 30
2058259	Linuron	5.94	Spike	P	0 - 30
2058259	MCPP	5.87	Spike	P	0 - 30
2058259	Naproxen	7.71	Spike	P	0 - 30
2058259	Primidone	8.49	Spike	P	0 - 30
2058259	Pyraclostrobin	6.85	Spike	P	0 - 30
2058259	Triclopyr	13.3	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P358147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058244	Acesulfame K	1.69	Spike	P	0 - 30
2058244	AMPA	10.5	Spike	P	0 - 30
2058244	Endothall	3.19	Spike	P	0 - 30
2058244	Glufosinate	16.9	Spike	P	0 - 30
2058244	Glyphosate	20.3	Spike	P	0 - 30
2058244	Sucralose	10.2	Spike	P	0 - 30

Reference Method: SM 2320 B-97

Batch ID: P358272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058033	Total Alkalinity	1.13	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97

Batch ID: P358555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058115	Total Alkalinity	0.494	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97

Batch ID: P358275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058033	Fluoride	0.516	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P358558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058115	Fluoride	0.509	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P358266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058019	Organic Carbon	1.50	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P358268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058007	Organic Carbon	1.49	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P358328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058470	Organic Carbon	1.85	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P358670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060038	Organic Carbon	0.837	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2058257
Field Sample ID: G5CE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.9	P	30 - 160
EPA 8321B	Diuron-d6	78.5	P	30 - 160
EPA 8321B	Endothall-d6	58.5	P	40 - 160
EPA 8321B	Endothall-d6	58.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	40 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	40 - 160
EPA 8321B	Ibuprofen-d3	91.6	P	30 - 160
EPA 8321B	Primidone-d5	98.4	P	30 - 160
EPA 8321B	Sucralose-d6	85.7	P	40 - 160
EPA 8321B	Sucralose-d6	85.7	P	40 - 160

Lab Sample ID: 2058258
Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.4	P	30 - 160
EPA 8321B	Diuron-d6	78.0	P	30 - 160
EPA 8321B	Endothall-d6	63.3	P	40 - 160
EPA 8321B	Endothall-d6	63.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	40 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	40 - 160
EPA 8321B	Ibuprofen-d3	106	P	30 - 160
EPA 8321B	Primidone-d5	99.4	P	30 - 160
EPA 8321B	Sucralose-d6	89.0	P	40 - 160
EPA 8321B	Sucralose-d6	89.0	P	40 - 160

Lab Sample ID: 2058259
Field Sample ID: G5CE0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.5	P	30 - 160
EPA 8321B	Diuron-d6	75.2	P	30 - 160
EPA 8321B	Endothall-d6	91.6	P	40 - 160
EPA 8321B	Endothall-d6	91.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	68.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	68.4	P	40 - 160
EPA 8321B	Ibuprofen-d3	107	P	30 - 160
EPA 8321B	Primidone-d5	97.1	P	30 - 160
EPA 8321B	Sucralose-d6	90.4	P	40 - 160
EPA 8321B	Sucralose-d6	90.4	P	40 - 160

Lab Sample ID: 2058285
Field Sample ID: G5CE0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2058285
Field Sample ID: G5CE0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.5	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	79.0	P	40 - 160
EPA 8321B	Endothall-d6	79.0	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	115	P	30 - 160
EPA 8321B	Primidone-d5	90.9	P	30 - 160
EPA 8321B	Sucralose-d6	93.8	P	40 - 160
EPA 8321B	Sucralose-d6	93.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A89080

Included Lab Sample IDs: 2058176, 2058177, 2058182, 2058183, 2058184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	93.4	91.4	P/P	90 - 110
Bromide	96.4	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89101

Included Lab Sample IDs: 2058180, 2058181, 2058190, 2058191, 2058192, 2058193

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.0	P/P	90 - 110
O-Phosphate-P	99.0	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89102

Included Lab Sample IDs: 2058176, 2058177, 2058182, 2058183, 2058184, 2058185

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89117

Included Lab Sample IDs: 2058186, 2058187, 2058188

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89137

Included Lab Sample IDs: 2058178, 2058179, 2058189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89146

Included Lab Sample IDs: 2058178, 2058179, 2058189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	97.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89165

Included Lab Sample IDs: 2058178, 2058186, 2058187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.8	P/P	90 - 110
Organic Carbon	98.8	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A89166

Included Lab Sample IDs: 2058176, 2058177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.7	P/P	90 - 110
Total Alkalinity	99.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89166

Included Lab Sample IDs: 2058176, 2058177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.5	P/P	90 - 110
Fluoride	99.0	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89169

Included Lab Sample IDs: 2058188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89174

Included Lab Sample IDs: 2058186, 2058187, 2058188, 2058189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	101	101	P/P	90 - 110
Total-P	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89180

Included Lab Sample IDs: 2058178, 2058179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89181

Included Lab Sample IDs: 2058257, 2058258, 2058259, 2058285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	123	135	P/P	60 - 160
Glufosinate	93.2	93.9	P/P	60 - 160
Glyphosate	107	101	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89186

Included Lab Sample IDs: 2058178, 2058179, 2058189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	108	P/P	90 - 110
Kjeldahl Nitrogen	108	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89190

Included Lab Sample IDs: 2058257, 2058258, 2058259, 2058285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.9	97.6	P/P	60 - 160
Endothall	89.4	80.8	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89193

Included Lab Sample IDs: 2058188, 2058189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	98.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89204

Included Lab Sample IDs: 2058268, 2058269, 2058270, 2058271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	105	104	P/P	90 - 110
Iron	105	105	P/P	90 - 110
Manganese	108	109	P/P	90 - 110
Manganese	108	108	P/P	90 - 110
Zinc	105	106	P/P	90 - 110
Zinc	107	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89207

Included Lab Sample IDs: 2058257, 2058258, 2058259, 2058285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.4	81.1	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89234

Included Lab Sample IDs: 2058186, 2058187, 2058188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	97.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89272

Included Lab Sample IDs: 2058182, 2058183, 2058184, 2058185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	99.9	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89272

Included Lab Sample IDs: 2058182, 2058183, 2058184, 2058185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.6	P/P	90 - 110
Fluoride	99.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89283

Included Lab Sample IDs: 2058186, 2058187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	99.3	P/P	90 - 110
Kjeldahl Nitrogen	99.2	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89286

Included Lab Sample IDs: 2058257, 2058258, 2058259, 2058285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.1	88.0	P/P	50 - 150
Acetaminophen	107	115	P/P	60 - 160
Bentazon	114	120	P/P	50 - 160
Carbamazepine	102	102	P/P	60 - 150
Diuron	99.2	103	P/P	60 - 150
Fenuron	103	105	P/P	60 - 150
Fluridone	105	105	P/P	60 - 160
Hydrocodone	99.9	97.7	P/P	60 - 150
Ibuprofen	92.2	112	P/P	50 - 160
Imazapyr	93.1	94.9	P/P	50 - 150
Imidacloprid	98.1	98.8	P/P	60 - 150
Linuron	102	101	P/P	60 - 150
MCPP	84.7	86.5	P/P	50 - 150
Naproxen	101	100	P/P	50 - 160
Primidone	103	99.6	P/P	60 - 150
Pyraclostrobin	104	101	P/P	60 - 150
Triclopyr	93.7	91.8	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A89320

Included Lab Sample IDs: 2058179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.7	97.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89350

Included Lab Sample IDs: 2058268, 2058269, 2058270, 2058271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.4	98.4	P/P	90 - 110
Aluminum	98.4	97.2	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Cadmium	99.5	99.6	P/P	90 - 110
Cadmium	99.6	99.7	P/P	90 - 110
Chromium	97.9	99.4	P/P	90 - 110
Chromium	99.4	97.9	P/P	90 - 110
Copper	97.8	98.6	P/P	90 - 110
Copper	98.6	99.6	P/P	90 - 110
Lead	102	103	P/P	90 - 110
Lead	103	100	P/P	90 - 110
Silver	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89350

Included Lab Sample IDs: 2058268, 2058269, 2058270, 2058271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	98.7	100	P/P	90 - 110
Thallium	93.3	91.8	P/P	90 - 110
Thallium	93.6	93.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89414

Included Lab Sample IDs: 2058268, 2058269, 2058270, 2058271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	101	99.0	P/P	90 - 110
Nickel	99.8	101	P/P	90 - 110
Selenium	97.8	98.3	P/P	90 - 110
Selenium	98.3	96.9	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A89435

Included Lab Sample IDs: 2058185

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89473

Included Lab Sample IDs: 2058268, 2058269, 2058270, 2058271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.7	99.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89544

Included Lab Sample IDs: 2058270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	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								13.5	
EPA 200.7 Rev. 4.4	Iron	110			113	105	109			3.58
	Manganese	98.1			103	107	96.0			4.04
	Zinc	104			115	104	108			3.81
EPA 200.8 Rev. 5.4	Aluminum	107			95.3	100	102			2.20
	Aluminum	103			99.6	102				2.55
	Antimony	102			110	109	105			0.515
	Arsenic	108			112	109	109			0.170
	Cadmium	105			108	107	107			0.231
	Chromium	99.0			103	98.2	96.3			1.97
	Copper	101			103	95.9	97.0			1.11
	Lead	101			105	102	102			0.311
	Nickel	101			104	96.3	96.3			0.0557
	Selenium	102			105	84.3	83.8			0.580
	Silver	105			105	105	104			1.34
	Thallium	96.1			104	100	101			0.943
EPA 300.0	Bromide	99.5			92.8	96.2				2.27
	Bromide	100			96.0	96.0			0.790	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3			104	105				0.689
	Ammonia-N	97.1			100	100				0.279
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102			109	108				0.459
	Kjeldahl Nitrogen	101			105	106				0.381
	Kjeldahl Nitrogen	102			104	109				4.25
EPA 353.2 Rev. 2.0	NO2NO3-N	101			99.0	98.5				0.304
	NO2NO3-N	102			98.0	98.5				0.509
	NO2NO3-N	102			101	100				0.265
EPA 365.1 Rev. 2.0	Total-P	104			101	101				0.416
	Total-P	104			107	105				2.44
	Total-P	101			103	104				0.726
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3			95.5	96.7				1.16
	O-Phosphate-P	99.5			94.7	97.3				2.30
	O-Phosphate-P	97.8			95.4	97.1				1.46
EPA 8321B	2,4-D	76.9			106	116				8.71
	Acesulfame K	111			74.3	73.1				1.69
	Acetaminophen	85.2			115	110				4.43
	AMPA	102			141	126				10.5
	Bentazon	94.7								2.13
	Carbamazepine	90.6			85.0	83.8				1.46
	Diuron	76.1			69.6	66.5				4.50
	Endothall	87.7			94.0	97.1				3.19
	Fenuron	105			100	87.9				13.0
	Fluridone	93.0			76.9	77.7				0.251
	Glufosinate	69.8			121	102				16.9
	Glyphosate	86.0			136	111				20.3
	Hydrocodone	87.6			108	99.5				7.75
	Ibuprofen	87.0			94.2	87.7				7.11
	Imazapyr	87.2			84.9	84.8				0.0143
	Imidacloprid	87.1			173	159				7.59
	Linuron	74.1			71.5	67.3				5.94
	MCP	91.2			130	138				5.87
	Naproxen	70.7			75.2	81.3				7.71
	Primidone	84.8			99.3	91.2				8.49
	Pyraclostrobin	71.0			77.6	72.5				6.85
	Sucralose	80.4			91.5	101				10.2

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Triclopyr	65.5	84.8	96.9		13.3
SM 2320 B-97	Total Alkalinity	102			1.13	
	Total Alkalinity	102			0.494	
SM 4500 F-C-97	Fluoride	97.6	95.9	96.6		0.516
	Fluoride	98.4				0.509
SM 5310 B-00	Organic Carbon	97.5	98.7	96.4		1.50
	Organic Carbon	97.8	95.3	97.2		1.49
	Organic Carbon	101	94.6	97.9		1.85
	Organic Carbon	99.8	98.5	97.4		0.837

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2058268, 2058269, 2058270, 2058271
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2058268, 2058269, 2058270, 2058271
EPA 300.0 / E31780	Bromide in aqueous matrices	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2058178, 2058179, 2058186, 2058187, 2058188, 2058189
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2058178, 2058179, 2058186, 2058187, 2058188, 2058189
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2058178, 2058179, 2058186, 2058187, 2058188, 2058189
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2058178, 2058179, 2058186, 2058187, 2058188, 2058189
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2058180, 2058181, 2058190, 2058191, 2058192, 2058193
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2058257, 2058258, 2058259, 2058285
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2058257, 2058258, 2058259, 2058285
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2058178, 2058179, 2058186, 2058187, 2058188, 2058189

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	01/30/2019			01/30/2019 16:34	Adrian Shelby	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
EPA 200.7 Rev. 4.4	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/05/2019 19:53	Betina Topolski	2058268
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/05/2019 20:23	Betina Topolski	2058269
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/05/2019 20:30	Betina Topolski	2058270
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/05/2019 20:45	Betina Topolski	2058271
EPA 200.8 Rev. 5.4	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/08/2019 23:19	Allison Taylor	2058268
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/08/2019 23:28	Allison Taylor	2058269
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/08/2019 23:38	Allison Taylor	2058270
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/09/2019 00:16	Allison Taylor	2058271
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/13/2019 23:05	Allison Taylor	2058268
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/13/2019 23:13	Allison Taylor	2058269
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/13/2019 23:44	Allison Taylor	2058270
	01/30/2019	02/04/2019 17:10	Elliott D. Healy	02/13/2019 23:51	Allison Taylor	2058271
	01/30/2019	02/14/2019 15:55	Elliott D. Healy	02/15/2019 22:56	Allison Taylor	2058268
	01/30/2019	02/14/2019 15:55	Elliott D. Healy	02/15/2019 23:05	Allison Taylor	2058269
	01/30/2019	02/14/2019 15:55	Elliott D. Healy	02/15/2019 23:15	Allison Taylor	2058270
	01/30/2019	02/14/2019 15:55	Elliott D. Healy	02/15/2019 23:24	Allison Taylor	2058271
	01/30/2019	02/19/2019 14:20	Elliott D. Healy	02/20/2019 19:57	Allison Taylor	2058270
EPA 300.0	01/30/2019			01/31/2019 21:24	Lipi Saha	2058176
	01/30/2019			01/31/2019 22:15	Lipi Saha	2058177
	01/30/2019			01/31/2019 22:32	Lipi Saha	2058182
	01/30/2019			01/31/2019 22:49	Lipi Saha	2058183
	01/30/2019			01/31/2019 23:06	Lipi Saha	2058184
	01/30/2019			02/14/2019 16:29	Lipi Saha	2058185
EPA 350.1 Rev. 2.0	01/30/2019			02/01/2019 14:17	Ping Hua	2058178
	01/30/2019			02/01/2019 14:19	Ping Hua	2058179
	01/30/2019			02/01/2019 14:20	Ping Hua	2058189
	01/30/2019			02/04/2019 10:30	Ping Hua	2058186
	01/30/2019			02/04/2019 10:34	Ping Hua	2058187
	01/30/2019			02/04/2019 10:36	Ping Hua	2058188
EPA 351.2 Rev. 2.0	01/30/2019	02/01/2019 13:15	Adrian Shelby	02/04/2019 12:08	Joseph Suarez	2058188
	01/30/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 09:44	Joseph Suarez	2058178
	01/30/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 09:45	Joseph Suarez	2058179
	01/30/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 09:50	Joseph Suarez	2058189
	01/30/2019	02/07/2019 10:50	Adrian Shelby	02/08/2019 09:38	Joseph Suarez	2058186
	01/30/2019	02/07/2019 10:50	Adrian Shelby	02/08/2019 09:43	Joseph Suarez	2058187
EPA 353.2 Rev. 2.0	01/30/2019			01/31/2019 11:05	Beverly Y. Sanders	2058186
	01/30/2019			01/31/2019 11:11	Beverly Y. Sanders	2058187
	01/30/2019			01/31/2019 11:12	Beverly Y. Sanders	2058188

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	01/30/2019			02/01/2019 11:49	Beverly Y. Sanders	2058178
	01/30/2019			02/01/2019 11:50	Beverly Y. Sanders	2058179
	01/30/2019			02/01/2019 12:03	Beverly Y. Sanders	2058189
EPA 365.1 Rev. 2.0	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 14:47	Rosalyn Ballman	2058186
	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 14:52	Rosalyn Ballman	2058187
	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 14:57	Rosalyn Ballman	2058188
	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 15:22	Rosalyn Ballman	2058189
	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 17:50	Rosalyn Ballman	2058178
	01/30/2019	02/01/2019 14:00	Sima Feizi	02/04/2019 17:51	Rosalyn Ballman	2058179
EPA 365.1 Rev. 2.0 dissolved	01/30/2019			01/30/2019 15:30	Jhamieka S. Greenwood	2058190
	01/30/2019			01/30/2019 15:32	Jhamieka S. Greenwood	2058191
	01/30/2019			01/30/2019 15:35	Jhamieka S. Greenwood	2058192
	01/30/2019			01/30/2019 15:41	Jhamieka S. Greenwood	2058193
	01/30/2019			01/30/2019 15:44	Jhamieka S. Greenwood	2058180
	01/30/2019			01/30/2019 15:45	Jhamieka S. Greenwood	2058181
EPA 8321B	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/02/2019 12:40	Rebecca Ware	2058257
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/02/2019 12:51	Rebecca Ware	2058258
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/02/2019 13:02	Rebecca Ware	2058259
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/02/2019 13:12	Rebecca Ware	2058285
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/03/2019 06:24	Rebecca Ware	2058257
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/03/2019 06:38	Rebecca Ware	2058258
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/03/2019 06:52	Rebecca Ware	2058259
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/03/2019 07:06	Rebecca Ware	2058285
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/04/2019 23:33	Rebecca Ware	2058257
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/04/2019 23:47	Rebecca Ware	2058258
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/05/2019 00:01	Rebecca Ware	2058259
	01/30/2019	02/01/2019 14:30	Rebecca Ware	02/05/2019 00:15	Rebecca Ware	2058285
	01/30/2019	02/04/2019 10:00	Hoor Shaik	02/06/2019 01:48	Juyoung Kim	2058257
	01/30/2019	02/04/2019 10:00	Hoor Shaik	02/06/2019 02:23	Juyoung Kim	2058258
	01/30/2019	02/04/2019 10:00	Hoor Shaik	02/06/2019 04:07	Juyoung Kim	2058259
	01/30/2019	02/04/2019 10:00	Hoor Shaik	02/06/2019 04:42	Juyoung Kim	2058285
SM 2320 B-97	01/30/2019			02/04/2019 08:38	Dale L. Simmons	2058176
	01/30/2019			02/04/2019 09:47	Dale L. Simmons	2058177
	01/30/2019			02/07/2019 14:00	Dale L. Simmons	2058182
	01/30/2019			02/07/2019 14:13	Dale L. Simmons	2058183
	01/30/2019			02/07/2019 16:05	Dale L. Simmons	2058184
SM 2540 D-97	01/30/2019			02/07/2019 16:18	Dale L. Simmons	2058185
	01/30/2019			02/01/2019 13:08	Yijie Li	2058176, 2058177, 2058182, 2058183, 2058184, 2058185
SM 4500 F-C-97	01/30/2019			02/04/2019 05:01	Dale L. Simmons	2058176

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	01/30/2019			02/04/2019 05:46	Dale L. Simmons	2058177
	01/30/2019			02/07/2019 14:00	Dale L. Simmons	2058182
	01/30/2019			02/07/2019 14:13	Dale L. Simmons	2058183
	01/30/2019			02/07/2019 16:05	Dale L. Simmons	2058184
	01/30/2019			02/07/2019 16:18	Dale L. Simmons	2058185
SM 5310 B-00	01/30/2019			02/02/2019 01:41	Julia Storbeck	2058186
	01/30/2019			02/02/2019 01:54	Julia Storbeck	2058187
	01/30/2019			02/02/2019 07:05	Julia Storbeck	2058178
	01/30/2019			02/04/2019 21:13	Julia Storbeck	2058188
	01/30/2019			02/04/2019 21:27	Julia Storbeck	2058189
	01/30/2019			02/08/2019 05:27	Chelsea Hernandez	2058179