

Chemical Analysis Report

CEN-DIST-2018-05-23-02

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

Event Description: **Winnemissett X3 + D&B / Marie**

Request ID: **RQ-2018-05-21-27**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

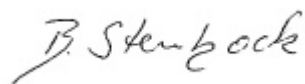
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 18-JUN-2018 14:05



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: Lake Winnemissett @ Center (2931)

Collection Date/Time: 05/22/2018 11:00

Field ID: G2CE0184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994823	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P346220	
		Sulfate	25		mg SO4/L	P346224	
	SM 2120 B	Color (true)	3.9	I	PCU	P345847	
	SM 2320 B-97	Total Alkalinity	4.8		mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	109		mg/L	P346319	
	SM 2540 D-97	TSS	2	I	mg/L	P346365	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346087	
1994826	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P346260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P346034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P346312	
1994829	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345825	
1994870	EPA 200.7 Rev. 4.4	Calcium	8.97		mg/L	P345876	
		Iron	30	U	ug/L	P345876	
		Magnesium	2.26		mg/L	P345876	
		Potassium	2.1		mg/L	P345876	
		Sodium	18.5		mg/L	P345876	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P345876	
		Arsenic	1.14		ug/L	P345876	
		Cadmium	0.020	U	ug/L	P345876	
		Chromium	0.40	U	ug/L	P345876	
		Copper	0.28	I	ug/L	P345876	
		Lead	0.057	I	ug/L	P345876	
		Nickel	0.20	U	ug/L	P345876	
		Silver	0.010	U	ug/L	P345876	

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: Lake Winnemissett @ 375m North of Center (2931)

Collection Date/Time: 05/22/2018 11:15

Field ID: G2CE0185

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994824	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P346220	
		Sulfate	25		mg SO4/L	P346224	
	SM 2120 B	Color (true)	3.9	I	PCU	P345847	
	SM 2320 B-97	Total Alkalinity	4.8		mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	110		mg/L	P346319	
	SM 2540 D-97	TSS	2	I	mg/L	P346365	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346087	
1994827	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P346260	

Field ID: G2CE0185

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994827	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P346034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P346312	
1994830	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345826	
1994871	EPA 200.7 Rev. 4.4	Calcium	9.09		mg/L	P345876	
		Iron	30	U	ug/L	P345876	
		Magnesium	2.29		mg/L	P345876	
		Potassium	2.1		mg/L	P345876	
		Sodium	18.8		mg/L	P345876	
		Zinc	5.0	U	ug/L	P345876	
	EPA 200.8 Rev. 5.4	Arsenic	1.20		ug/L	P345876	
		Cadmium	0.020	U	ug/L	P345876	
		Chromium	0.40	U	ug/L	P345876	
		Copper	0.23	I	ug/L	P345876	
		Lead	0.060	I	ug/L	P345876	
		Nickel	0.20	U	ug/L	P345876	
		Silver	0.010	U	ug/L	P345876	

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: Lake Winnemissett @ 350m South of Center
(2931)**

Collection Date/Time: 05/22/2018 10:48

Field ID: G2CE0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994825	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P346220	
		Sulfate	25		mg SO4/L	P346224	
	SM 2120 B	Color (true)	4.1	I	PCU	P345848	
	SM 2320 B-97	Total Alkalinity	4.6		mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	108	A	mg/L	P346319	
	SM 2540 D-97	TSS	2	IA	mg/L	P346365	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346087	
1994828	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P346260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P346034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P346312	
1994831	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345826	
1994872	EPA 200.7 Rev. 4.4	Calcium	9.10		mg/L	P345876	
		Iron	30	U	ug/L	P345876	
		Magnesium	2.34		mg/L	P345876	
		Potassium	2.1		mg/L	P345876	

Field ID: G2CE0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994872	EPA 200.7 Rev. 4.4	Sodium	19.1		mg/L	P345876	
		Zinc	5.0	U	ug/L	P345876	
	EPA 200.8 Rev. 5.4	Arsenic	1.15		ug/L	P345876	
		Cadmium	0.020	U	ug/L	P345876	
		Chromium	0.40	U	ug/L	P345876	
		Copper	0.24	I	ug/L	P345876	
		Lead	0.063	I	ug/L	P345876	
		Nickel	0.20	U	ug/L	P345876	
		Silver	0.010	U	ug/L	P345876	

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: Lake Winnemissett @ Center (2931)

Collection Date/Time: 05/22/2018 11:05

Field ID: G2CE0184_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994835	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P346220	
		Sulfate	25		mg SO4/L	P346224	
	SM 2120 B	Color (true)	3.4	I	PCU	P345848	
	SM 2320 B-97	Total Alkalinity	4.9	A	mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	98		mg/L	P346319	
	SM 2540 D-97	TSS	2	I	mg/L	P346365	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346087	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P346260	
		Kjeldahl Nitrogen	0.36		mg N/L	P346034	
1994836	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P346312	
1994837	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345826	
1994873	EPA 200.7 Rev. 4.4	Calcium	9.08		mg/L	P345876	
		Iron	30	U	ug/L	P345876	
		Magnesium	2.29		mg/L	P345876	
		Potassium	2.1		mg/L	P345876	
		Sodium	18.8		mg/L	P345876	
		Zinc	5.0	U	ug/L	P345876	
		Arsenic	1.15		ug/L	P345876	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P345876	
		Chromium	0.40	U	ug/L	P345876	
		Copper	0.25	I	ug/L	P345876	
		Lead	0.053	I	ug/L	P345876	
		Nickel	0.20	U	ug/L	P345876	
		Silver	0.010	U	ug/L	P345876	

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: Field Blank

Collection Date/Time: 05/22/2018 11:35

Field ID: BLANK_05222018

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994838	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P346220	
		Sulfate	0.20	U	mg SO4/L	P346224	
	SM 2120 B	Color (true)	2.5	U	PCU	P345848	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	15	U	mg/L	P346315	
	SM 2540 D-97	TSS	2	U	mg/L	P346361	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346087	
1994839	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P346260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P346034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P346312	
1994840	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345826	
1994874	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P345876	
		Iron	30	U	ug/L	P345876	
		Magnesium	0.040	U	mg/L	P345876	
		Potassium	0.30	U	mg/L	P345876	
		Sodium	0.50	U	mg/L	P345876	
		Zinc	5.0	U	ug/L	P345876	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P345876	
		Cadmium	0.020	U	ug/L	P345876	
		Chromium	0.40	U	ug/L	P345876	
		Copper	0.28	I	ug/L	P346470	
		Lead	0.050	U	ug/L	P345876	
		Nickel	0.20	U	ug/L	P345876	
		Silver	0.010	U	ug/L	P345876	

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.

EPA 200.8 Rev. 5.4: The copper result was confirmed on 05/25/2018.

Sample Location: Lake Marie @ Center (2951)

Collection Date/Time: 05/22/2018 13:13

Field ID: G2CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994832	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P345831	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P346220	
		Sulfate	5.0		mg SO4/L	P346224	
	SM 2120 B	Color (true)	34	A	PCU	P345848	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P346083	
	SM 2540 C-97	TDS	176		mg/L	P346319	
	SM 2540 D-97	TSS	3	I	mg/L	P346365	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P346087	
1994833	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P346260	

Field ID: G2CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1994833	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P346034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345901	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P345894	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P346312	
1994834	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P345826	
1994869	EPA 8321B	2,4-D	0.0047	I	ug/L	P345505	
		Bentazon	8.0E-04	U	ug/L	P345505	
		MCP	0.0020	U	ug/L	P345505	
		Triclopyr**	0.0040	U	ug/L	P345505	MS
		Imidacloprid	0.0020	U	ug/L	P345505	
		Diuron	0.0020	U	ug/L	P345505	
		Pyraclostrobin**	0.0020	U	ug/L	P345505	
		Primidone**	0.0040	U	ug/L	P345505	
		Linuron	0.0040	U	ug/L	P345505	
		Acetaminophen**	0.0080	U	ug/L	P345505	
		Fenuron	0.016	U	ug/L	P345505	
		Imazapyr**	0.032		ug/L	P345505	
		Carbamazepine**	4.0E-04	U	ug/L	P345505	
		Fluridone**	0.18		ug/L	P345505	
		Hydrocodone**	8.0E-04	U	ug/L	P345505	
		Sucralose**	1.3		ug/L	P345837	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P345831

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P345876

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: P345876

Component	Result	Code	Units
Arsenic	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P345876

Component	Result	Code	Units
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346470

Component	Result	Code	Units
Copper	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346220

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346224

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346260

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346034

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345901

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345894

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: P345825

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345826

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

Reference Method: EPA 8321B
Batch ID: P345505

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P345837

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P345847

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P345848

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346083

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P346315

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P346319

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346361

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346365

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P346087

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346312

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: P345876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.3		P	85 - 115
Iron	102		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	102		P	85 - 115
Sodium	102		P	85 - 115
Zinc	94.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P345876

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P345876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	98.6		P	85 - 115
Chromium	96.6		P	85 - 115
Copper	95.2		P	85 - 115
Lead	94.8		P	85 - 115
Nickel	97.9		P	85 - 115
Silver	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	93.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346220

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346260

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346034

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.7		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345825

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: P345826

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

Reference Method: EPA 8321B
Batch ID: P345505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	65.0		P	40 - 150
Acetaminophen	102		P	30 - 150
Bentazon	81.7		P	30 - 150
Carbamazepine	87.4		P	40 - 150
Diuron	68.7		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	83.6		P	40 - 150
Hydrocodone	99.5		P	40 - 150
Imazapyr	88.5		P	40 - 150
Imidacloprid	93.1		P	40 - 160
Linuron	72.9		P	40 - 150
MCPP	88.5		P	40 - 150
Primidone	90.3		P	40 - 150
Pyraclostrobin	82.1		P	40 - 150
Triclopyr	85.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P345837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.3		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P346083

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P345876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994756	Calcium	99.0		P	80 - 120
1994756	Iron	101	102	P/P	80 - 120
1994756	Magnesium	101	104	P/P	80 - 120
1994756	Potassium	103	105	P/P	80 - 120
1994756	Sodium	103		P	80 - 120
1994756	Zinc	97.7	99.2	P/P	80 - 120
1994870	Calcium	102		P	80 - 120
1994870	Iron	103		P	80 - 120
1994870	Magnesium	105		P	80 - 120
1994870	Potassium	104		P	80 - 120
1994870	Sodium	103		P	80 - 120
1994870	Zinc	97.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P345876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994756	Arsenic	100	102	P/P	80 - 120
1994756	Cadmium	96.2	101	P/P	80 - 120
1994756	Chromium	92.9	95.7	P/P	80 - 120
1994756	Copper	94.3	96.8	P/P	80 - 120
1994756	Lead	94.3	95.9	P/P	80 - 120
1994756	Nickel	97.2	99.8	P/P	80 - 120
1994756	Silver	96.9	100	P/P	80 - 120
1994870	Arsenic	103		P	80 - 120
1994870	Cadmium	97.9		P	80 - 120
1994870	Chromium	94.6		P	80 - 120
1994870	Copper	95.1		P	80 - 120
1994870	Lead	95.2		P	80 - 120
1994870	Nickel	98.2		P	80 - 120
1994870	Silver	97.8		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P346470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993371	Copper	95.4		P	80 - 120
1994932	Copper	93.4	98.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994739	Chloride	95.2		P	90 - 110
1994825	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994739	Sulfate	97.4		P	90 - 110
1994825	Sulfate	98.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994826	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994836	Kjeldahl Nitrogen	103	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994826	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994828	Total-P	103	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994741	O-Phosphate-P	94.8	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994830	O-Phosphate-P	95.7	95.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P345505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994050	2,4-D	122	149	P/P	40 - 150
1994050	Acetaminophen	87.5	87.6	P/P	30 - 150
1994050	Bentazon	49.3	45.1	P/P	30 - 150
1994050	Carbamazepine	51.5	58.3	P/P	40 - 150
1994050	Diuron	57.4	55.0	P/P	40 - 150
1994050	Fenuron	53.2	52.8	P/P	40 - 150
1994050	Fluridone	67.4	66.9	P/P	40 - 150
1994050	Hydrocodone	76.2	74.3	P/P	40 - 150
1994050	Imazapyr	69.7	95.3	P/P	40 - 150
1994050	Imidacloprid	122	118	P/P	40 - 160
1994050	Linuron	60.8	65.4	P/P	40 - 150
1994050	MCPP	134	130	P/P	40 - 150
1994050	Primidone	69.0	65.5	P/P	40 - 150
1994050	Pyraclostrobin	73.3	89.4	P/P	40 - 150
1994050	Triclopyr	187	171	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P345837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994753	Sucralose	121	108	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P346087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994835	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994734	Organic Carbon	94.2	92.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P345831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994776	Turbidity	3.05	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P345876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994756	Calcium	1.22	Spike	P	0 - 20
1994756	Iron	1.13	Spike	P	0 - 20
1994756	Magnesium	1.91	Spike	P	0 - 20
1994756	Potassium	1.12	Spike	P	0 - 20
1994756	Sodium	1.23	Spike	P	0 - 20
1994756	Zinc	1.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P345876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994756	Arsenic	2.17	Spike	P	0 - 20
1994756	Cadmium	4.42	Spike	P	0 - 20
1994756	Chromium	3.00	Spike	P	0 - 20
1994756	Copper	2.55	Spike	P	0 - 20
1994756	Lead	1.68	Spike	P	0 - 20
1994756	Nickel	2.60	Spike	P	0 - 20
1994756	Silver	3.16	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994932	Copper	4.93	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994739	Chloride	0.431	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994826	Ammonia-N	2.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994836	Kjeldahl Nitrogen	5.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994826	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994828	Total-P	4.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994741	O-Phosphate-P	1.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994830	O-Phosphate-P	0.629	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P345505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994050	2,4-D	12.1	Spike	P	0 - 30
1994050	Acetaminophen	0.153	Spike	P	0 - 30
1994050	Bentazon	8.90	Spike	P	0 - 30
1994050	Carbamazepine	12.4	Spike	P	0 - 30
1994050	Diuron	4.31	Spike	P	0 - 30
1994050	Fenuron	0.887	Spike	P	0 - 30
1994050	Fluridone	0.658	Spike	P	0 - 30
1994050	Hydrocodone	2.55	Spike	P	0 - 30
1994050	Imazapyr	5.75	Spike	P	0 - 30
1994050	Imidacloprid	3.32	Spike	P	0 - 30
1994050	Linuron	7.36	Spike	P	0 - 30
1994050	MCP	3.40	Spike	P	0 - 30
1994050	Primidone	5.24	Spike	P	0 - 30
1994050	Pyraclostrobin	19.7	Spike	P	0 - 30
1994050	Triclopyr	8.55	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P345837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994753	Sucralose	9.03	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P345847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994742	Color (true)	0.222	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P345848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994832	Color (true)	13.5	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994835	Total Alkalinity	0.226	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P346315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994353	TDS	3.10	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P346319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994825	TDS	8.37	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P346087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994835	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994734	Organic Carbon	1.18	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: 1994869
Field Sample ID: G2CE0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.9	P	30 - 160
EPA 8321B	Diuron-d6	71.2	P	30 - 160
EPA 8321B	Primidone-d5	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A84113
Included Lab Sample IDs: 1994829, 1994830, 1994831, 1994834, 1994837, 1994840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	100	P/P	90 - 110
O-Phosphate-P	99.5	99.2	P/P	90 - 110
O-Phosphate-P	99.5	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A84114
Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84114

Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

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

Reference Method: SM 2120 B

Run ID: A84124

Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84142

Included Lab Sample IDs: 1994826, 1994827, 1994828, 1994833, 1994836, 1994839

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

Reference Method: SM 2320 B-97

Run ID: A84181

Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.6	P/P	90 - 110
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84181

Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.7	98.1	P/P	90 - 110
Fluoride	97.6	96.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84186

Included Lab Sample IDs: 1994869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.6	113	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84201

Included Lab Sample IDs: 1994826, 1994827, 1994828, 1994833, 1994836, 1994839

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A84216

Included Lab Sample IDs: 1994870, 1994871, 1994872, 1994873, 1994874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	98.0	P/P	90 - 110
Calcium	98.3	97.4	P/P	90 - 110
Iron	97.3	98.5	P/P	90 - 110
Iron	99.3	98.2	P/P	90 - 110
Magnesium	100	98.6	P/P	90 - 110
Magnesium	97.5	98.7	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Zinc	96.7	95.1	P/P	90 - 110
Zinc	97.7	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84230

Included Lab Sample IDs: 1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	105	P/P	90 - 110
Chloride	105	104	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A84247

Included Lab Sample IDs: 1994870, 1994871, 1994872, 1994873, 1994874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	101	P/P	90 - 110
Arsenic	98.3	99.0	P/P	90 - 110
Cadmium	96.3	97.1	P/P	90 - 110
Cadmium	97.3	97.4	P/P	90 - 110
Chromium	94.9	97.1	P/P	90 - 110
Chromium	97.2	97.4	P/P	90 - 110
Copper	98.5	98.9	P/P	90 - 110
Lead	94.2	94.7	P/P	90 - 110
Lead	95.5	95.5	P/P	90 - 110
Nickel	96.4	96.5	P/P	90 - 110
Nickel	97.9	98.4	P/P	90 - 110
Silver	96.5	97.5	P/P	90 - 110
Silver	97.2	97.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84279

Included Lab Sample IDs: 1994869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.6	85.6	P/P	50 - 150
Acetaminophen	123	120	P/P	60 - 150
Bentazon	99.5	94.8	P/P	50 - 150
Carbamazepine	118	120	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A84279

Included Lab Sample IDs: 1994869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	119	132	P/P	60 - 150
Fenuron	116	112	P/P	60 - 150
Fluridone	123	123	P/P	60 - 160
Hydrocodone	114	119	P/P	60 - 150
Imazapyr	99.1	94.8	P/P	50 - 150
Imidacloprid	97.5	105	P/P	60 - 150
Linuron	117	118	P/P	60 - 150
MCPP	82.2	85.1	P/P	50 - 150
Primidone	111	102	P/P	60 - 150
Pyraclostrobin	105	116	P/P	60 - 150
Triclopyr	95.8	97.6	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84295

Included Lab Sample IDs: 1994826, 1994827, 1994828, 1994833, 1994836, 1994839

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84301

Included Lab Sample IDs: 1994826, 1994827, 1994828, 1994833, 1994836, 1994839

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

Reference Method: SM 5310 B-00

Run ID: A84324

Included Lab Sample IDs: 1994826, 1994827, 1994828, 1994833, 1994836, 1994839

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	96.0	P/P	90 - 110
Organic Carbon	96.0	96.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A84470

Included Lab Sample IDs: 1994874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	94.6	96.1	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					3.05	
EPA 200.7 Rev. 4.4	Calcium	99.3	99.0	102			1.22
	Iron	102	101	102	103		1.13
	Magnesium	105	101	104	105		1.91
	Potassium	102	103	105	104		1.12
	Sodium	102	103	103			1.23
	Zinc	94.3	97.7	99.2	97.2		1.54
EPA 200.8 Rev. 5.4	Arsenic	100	100	102	103		2.17
	Cadmium	98.6	96.2	101	97.9		4.42
	Chromium	96.6	92.9	95.7	94.6		3.00
	Copper	95.2	94.3	96.8	95.1		2.55
	Copper	93.5	95.4	93.4	98.1		4.93
	Lead	94.8	94.3	95.9	95.2		1.68
	Nickel	97.9	97.2	99.8	98.2		2.60
	Silver	98.9	96.9	100	97.8		3.16
EPA 300.0 Rev. 2.1	Chloride	101	95.2	100		0.431	
	Sulfate	99.6	97.4	98.4			
EPA 350.1 Rev. 2.0	Ammonia-N	102	104	106			2.35
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	103	95.9			5.35
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	103	104			0.484
EPA 365.1 Rev. 2.0	Total-P	97.7	103	99.0			4.08
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	94.8	95.8			1.05
	O-Phosphate-P	100	95.7	95.1			0.629
EPA 8321B	2,4-D	65.0	122	149			12.1
	Acetaminophen	102	87.5	87.6			0.153
	Bentazon	81.7	49.3	45.1			8.90
	Carbamazepine	87.4	51.5	58.3			12.4
	Diuron	68.7	57.4	55.0			4.31
	Fenuron	102	53.2	52.8			0.887
	Fluridone	83.6	67.4	66.9			0.658
	Hydrocodone	99.5	76.2	74.3			2.55
	Imazapyr	88.5	69.7	95.3			5.75
	Imidacloprid	93.1	122	118			3.32
	Linuron	72.9	60.8	65.4			7.36
	MCPP	88.5	134	130			3.40
	Primidone	90.3	69.0	65.5			5.24
	Pyraclostrobin	82.1	73.3	89.4			19.7
	Sucralose	97.3	121	108			9.03
	Triclopyr	85.3	187	171			8.55
SM 2120 B	Color (true)					0.222	
	Color (true)					13.5	
SM 2320 B-97	Total Alkalinity	104				0.226	
SM 2540 C-97	TDS					3.10	
	TDS					8.37	
SM 4500 F-C-97	Fluoride	94.0	101	101			0.0
SM 5310 B-00	Organic Carbon	95.4	94.2	92.2			1.18

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1994823, 1994824, 1994825, 1994832, 1994835, 1994838

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1994870, 1994871, 1994872, 1994873, 1994874
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1994870, 1994871, 1994872, 1994873, 1994874
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1994826, 1994827, 1994828, 1994833, 1994836, 1994839
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1994826, 1994827, 1994828, 1994833, 1994836, 1994839
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1994826, 1994827, 1994828, 1994833, 1994836, 1994839
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1994826, 1994827, 1994828, 1994833, 1994836, 1994839
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1994829, 1994830, 1994831, 1994834, 1994837, 1994840
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1994869
SM 2120 B / E31780	True Color measured at 450 nm	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1994826, 1994827, 1994828, 1994833, 1994836, 1994839

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	05/23/2018			05/23/2018 17:13	William L. Brown IV	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
EPA 200.7 Rev. 4.4	05/23/2018	05/24/2018 14:46	Allison Taylor	05/30/2018 02:37	Betina Topolski	1994874
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/30/2018 06:11	Betina Topolski	1994870
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/30/2018 06:30	Betina Topolski	1994871
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/30/2018 06:37	Betina Topolski	1994872
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/30/2018 06:45	Betina Topolski	1994873
EPA 200.8 Rev. 5.4	05/23/2018	05/24/2018 14:46	Allison Taylor	05/25/2018 20:09	Nadine Brooks	1994874
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/26/2018 01:17	Nadine Brooks	1994870
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/26/2018 01:36	Nadine Brooks	1994871
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/26/2018 01:46	Nadine Brooks	1994872
	05/23/2018	05/24/2018 14:46	Allison Taylor	05/26/2018 01:56	Nadine Brooks	1994873
	05/23/2018	06/06/2018 14:40	Elliott D. Healy	06/08/2018 12:42	Nadine Brooks	1994874
EPA 300.0 Rev. 2.1	05/23/2018			05/31/2018 20:16	Lipi Saha	1994825
	05/23/2018			05/31/2018 22:28	Lipi Saha	1994823
	05/23/2018			05/31/2018 22:40	Lipi Saha	1994824
	05/23/2018			05/31/2018 22:52	Lipi Saha	1994832
	05/23/2018			05/31/2018 23:04	Lipi Saha	1994835
	05/23/2018			05/31/2018 23:15	Lipi Saha	1994838
EPA 350.1 Rev. 2.0	05/23/2018			06/01/2018 12:00	Ping Hua	1994826
	05/23/2018			06/01/2018 12:12	Ping Hua	1994827
	05/23/2018			06/01/2018 12:14	Ping Hua	1994828
	05/23/2018			06/01/2018 12:15	Ping Hua	1994833
	05/23/2018			06/01/2018 12:17	Ping Hua	1994836
	05/23/2018			06/01/2018 12:23	Ping Hua	1994839
EPA 351.2 Rev. 2.0	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:03	Joseph Suarez	1994826
	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:05	Joseph Suarez	1994827
	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:09	Joseph Suarez	1994828
	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:11	Joseph Suarez	1994833
	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:12	Joseph Suarez	1994836
	05/23/2018	05/29/2018 16:00	Adrian Shelby	06/01/2018 13:17	Joseph Suarez	1994839
EPA 353.2 Rev. 2.0	05/23/2018			05/24/2018 13:04	Lauren Bottorf	1994826
	05/23/2018			05/24/2018 13:12	Lauren Bottorf	1994839
	05/23/2018			05/24/2018 13:15	Lauren Bottorf	1994833
	05/23/2018			05/24/2018 13:16	Lauren Bottorf	1994836
	05/23/2018			05/24/2018 13:18	Lauren Bottorf	1994827
	05/23/2018			05/24/2018 13:19	Lauren Bottorf	1994828
EPA 365.1 Rev. 2.0	05/23/2018	05/24/2018 13:10	Sima Feizi	05/29/2018 12:24	Lipi Saha	1994826
	05/23/2018	05/24/2018 13:10	Sima Feizi	05/29/2018 12:25	Lipi Saha	1994827
	05/23/2018	05/24/2018 13:10	Sima Feizi	05/29/2018 12:33	Lipi Saha	1994828

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	05/23/2018	05/24/2018 13:10	Sima Feizi	05/29/2018 12:34	Lipi Saha	1994833, 1994836
	05/23/2018	05/24/2018 13:10	Sima Feizi	05/29/2018 12:35	Lipi Saha	1994839
EPA 365.1 Rev. 2.0 dissolved	05/23/2018			05/23/2018 15:59	Megan Treadwell	1994830
	05/23/2018			05/23/2018 16:26	Megan Treadwell	1994829, 1994831
	05/23/2018			05/23/2018 16:31	Megan Treadwell	1994834
	05/23/2018			05/23/2018 16:32	Megan Treadwell	1994837
	05/23/2018			05/23/2018 16:33	Megan Treadwell	1994840
EPA 8321B	05/23/2018	05/23/2018 14:00	Hoor Shaik	05/24/2018 02:43	Juyoung Kim	1994869
	05/23/2018	05/23/2018 14:00	Hoor Shaik	05/24/2018 19:27	Juyoung Kim	1994869
	05/23/2018	05/25/2018 14:00	Juyoung Kim	05/26/2018 01:09	Juyoung Kim	1994869
SM 2120 B	05/23/2018			05/23/2018 16:01	Tanya Welborn	1994823
	05/23/2018			05/23/2018 16:02	Tanya Welborn	1994824
	05/23/2018			05/23/2018 16:05	Tanya Welborn	1994825
	05/23/2018			05/23/2018 16:07	Tanya Welborn	1994832
	05/23/2018			05/23/2018 16:08	Tanya Welborn	1994835, 1994838
SM 2320 B-97	05/23/2018			05/25/2018 17:39	Dale L. Simmons	1994835
	05/23/2018			05/25/2018 19:39	Dale L. Simmons	1994823
	05/23/2018			05/25/2018 19:50	Dale L. Simmons	1994824
	05/23/2018			05/25/2018 20:01	Dale L. Simmons	1994825
	05/23/2018			05/25/2018 20:11	Dale L. Simmons	1994832
	05/23/2018			05/25/2018 20:23	Dale L. Simmons	1994838
SM 2540 C-97	05/23/2018			05/25/2018 16:24	Yijie Li	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 2540 D-97	05/23/2018			05/25/2018 16:24	Yijie Li	1994823, 1994824, 1994825, 1994832, 1994835, 1994838
SM 4500 F-C-97	05/23/2018			05/25/2018 17:31	Dale L. Simmons	1994835
	05/23/2018			05/25/2018 19:39	Dale L. Simmons	1994823
	05/23/2018			05/25/2018 19:50	Dale L. Simmons	1994824
	05/23/2018			05/25/2018 20:01	Dale L. Simmons	1994825
	05/23/2018			05/25/2018 20:11	Dale L. Simmons	1994832
	05/23/2018			05/25/2018 20:23	Dale L. Simmons	1994838
SM 5310 B-00	05/23/2018			06/02/2018 00:30	Megan Treadwell	1994826
	05/23/2018			06/02/2018 00:47	Megan Treadwell	1994827
	05/23/2018			06/02/2018 01:34	Megan Treadwell	1994828
	05/23/2018			06/02/2018 01:48	Megan Treadwell	1994833
	05/23/2018			06/02/2018 02:03	Megan Treadwell	1994836
	05/23/2018			06/02/2018 02:19	Megan Treadwell	1994839