

Chemical Analysis Report

SE-DIST-2018-11-27-01

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

Event Description: **SMP- Martin Boat**

Request ID: **RQ-2018-11-19-03**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

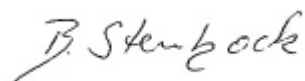
FL Dept. of Environmental Protection
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Date Certified: 17-DEC-2018 16:19



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: Manatee Pocket @ Port Salerno

Collection Date/Time: 11/26/2018 13:00

Field ID: G2SE0012

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043737	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	7	IA	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P355711	
2043738	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P355401	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P355327	
2043739	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P355157	
2043789	EPA 200.7 Rev. 4.4	Iron	140	I	ug/L	P355158	
		Zinc	20	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	3.22		ug/L	P355158	
		Cadmium	0.080	U	ug/L	P355158	
		Chromium	1.6	U	ug/L	P355158	
		Copper	4.7		ug/L	P355158	
		Lead	0.50	U	ug/L	P355158	
		Nickel	0.80	U	ug/L	P355158	
		Silver	0.040	U	ug/L	P355158	

Ref. Method and Comment:

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 in the undigested sample on 12/03/2018.

Sample Location: Great Pocket @ Marker 8

Collection Date/Time: 11/26/2018 13:20

Field ID: G2SE0033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043734	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	9	I	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P355711	
2043735	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P355374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P355217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P355230	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P355327	
2043736	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P355157	

Ref. Method and Comment:

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

Sample Location: North Fork St.Lucie River just downstream C24 Collection Date/Time: 11/26/2018 13:45

Field ID: G2SE0045

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043752	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	7	IQ	mg/L	P356007	
	SM 4500 F-C-97	Fluoride	0.85		mg F/L	P355711	
2043754	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P355327	
2043756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P355157	
2043787	EPA 8321B	2,4-D	0.014		ug/L	P355221	
		Bentazon	0.012		ug/L	P355221	
		MCP	0.0020	U	ug/L	P355221	
		Triclopyr**	0.0040	U	ug/L	P355221	
		Imidacloprid	0.0054	I	ug/L	P355221	MS
		Diuron	0.014		ug/L	P355221	
		Pyraclostrobin**	0.0020	U	ug/L	P355221	
		Primidone**	0.0040	U	ug/L	P355221	
		Linuron	0.0040	U	ug/L	P355221	
		Acetaminophen**	0.0080	U	ug/L	P355221	
		Fenuron	0.016	U	ug/L	P355221	
		Imazapyr**	0.12		ug/L	P355221	
		Carbamazepine**	8.0E-04	U	ug/L	P355221	
		Fluridone**	0.0052		ug/L	P355221	
		Hydrocodone**	8.0E-04	U	ug/L	P355221	
		Sucralose**	0.067		ug/L	P355225	
		Acesulfame K**	0.10	U	ug/L	P355225	
2043792	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.80		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	1.6	I	ug/L	P355158	
		Lead	0.50	U	ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

Ref. Method and Comment:

SM 2540 D-97: Sample reanalyzed out of holding time due to analytical difficulties.

Sample Location: North Fork SLR @ Veterans Memorial Park

Collection Date/Time: 11/26/2018 14:00

Field ID: G2SE0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043753	EPA 180.1 Rev. 2.0	Turbidity	4.5	A	NTU	P355152	
	SM 2320 B-97	Total Alkalinity	137		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	12		mg/L	P355513	
	SM 4500 F-C-97	Fluoride	0.81		mg F/L	P355711	
2043755	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.06		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P355327	
2043757	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P355157	
2043788	EPA 8321B	2,4-D	0.014		ug/L	P355221	
		Bentazon	0.011		ug/L	P355221	
		MCP	0.0020	U	ug/L	P355221	
		Triclopyr**	0.0040	U	ug/L	P355221	
		Imidacloprid	0.0061	I	ug/L	P355221	MS
		Diuron	0.020		ug/L	P355221	
		Pyraclostrobin**	0.0020	U	ug/L	P355221	
		Primidone**	0.0040	U	ug/L	P355221	
		Linuron	0.0040	U	ug/L	P355221	
		Acetaminophen**	0.0080	U	ug/L	P355221	
		Fenuron	0.016	U	ug/L	P355221	
		Imazapyr**	0.11		ug/L	P355221	
		Carbamazepine**	8.0E-04	U	ug/L	P355221	
		Fluridone**	0.0061		ug/L	P355221	
		Hydrocodone**	8.0E-04	U	ug/L	P355221	
		Sucralose**	0.12		ug/L	P355225	
		Acesulfame K**	0.10	U	ug/L	P355225	
2043793	EPA 200.7 Rev. 4.4	Iron	230	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.78		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	1.8	I	ug/L	P355538	
		Lead	0.50	U	ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ St.Lucie Settlement

Collection Date/Time: 11/26/2018 11:30

Field ID: G2SE0040

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043746	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	182	A	mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	4	I	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	0.40		mg F/L	P355711	
2043748	EPA 350.1 Rev. 2.0	Ammonia-N	0.098		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P355327	
2043750	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.092		mg P/L	P355157	
2043790	EPA 200.7 Rev. 4.4	Iron	150	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.69		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	3.2		ug/L	P355158	
		Lead	0.15	U	ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ SW Fuge

Collection Date/Time: 11/26/2018 12:00

Field ID: G2SE0041

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043747	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	6	I	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	0.53		mg F/L	P355711	
2043749	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P355327	
2043751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P355157	
2043791	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P355158	
		Zinc	15	U	ug/L	P355158	
	EPA 200.8 Rev. 5.4	Arsenic	2.68		ug/L	P355158	
		Cadmium	0.060	U	ug/L	P355158	
		Chromium	1.2	U	ug/L	P355158	
		Copper	2.6		ug/L	P355158	
		Lead	0.15	U	ug/L	P355158	
		Nickel	0.60	U	ug/L	P355158	
		Silver	0.030	U	ug/L	P355158	

Ref. Method and Comment:

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

Sample Location: South Fork Saint Lucie @ Martin Hwy

Collection Date/Time: 11/26/2018 12:20

Field ID: G2SE0044

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043740	EPA 180.1 Rev. 2.0	Turbidity	6.1	A	NTU	P355151	
	SM 2320 B-97	Total Alkalinity	143		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	8	I	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	0.76		mg F/L	P355711	
2043742	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P355327	
2043744	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P355157	
2043785	EPA 8321B	2,4-D	0.0097		ug/L	P355221	
		Bentazon	0.012		ug/L	P355221	
		MCP	0.0020	U	ug/L	P355221	
		Triclopyr**	0.0040	U	ug/L	P355221	
		Imidacloprid	0.0035	I	ug/L	P355221	MS
		Diuron	0.0044	I	ug/L	P355221	
		Pyraclostrobin**	0.0020	U	ug/L	P355221	
		Primidone**	0.0040	U	ug/L	P355221	
		Linuron	0.0040	U	ug/L	P355221	
		Acetaminophen**	0.0080	U	ug/L	P355221	
		Fenuron	0.016	U	ug/L	P355221	
		Imazapyr**	0.067		ug/L	P355221	
		Carbamazepine**	8.0E-04	U	ug/L	P355221	
		Fluridone**	0.0052		ug/L	P355221	
		Hydrocodone**	8.0E-04	U	ug/L	P355221	
		Naproxen**	0.0080	U	ug/L	P355221	
		Ibuprofen**	0.020	U	ug/L	P355221	
		Sucralose**	0.098		ug/L	P355225	
		Acesulfame K**	0.10	U	ug/L	P355225	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ Leighton Park

Collection Date/Time: 11/26/2018 12:30

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043741	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P355151	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P355707	
	SM 2540 D-97	TSS	6	I	mg/L	P355513	
	SM 4500 F-C-97	Fluoride	0.87		mg F/L	P355711	
2043743	EPA 350.1 Rev. 2.0	Ammonia-N	0.096		mg N/L	P355441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P355219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.090		mg N/L	P355244	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P355231	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P355327	
2043745	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P355157	
2043786	EPA 8321B	2,4-D	0.011		ug/L	P355221	
		Bentazon	0.012		ug/L	P355221	
		MCP	0.0020	U	ug/L	P355221	
		Triclopyr**	0.0040	U	ug/L	P355221	
		Imidacloprid	0.0043	I	ug/L	P355221	MS
		Diuron	0.0050	I	ug/L	P355221	
		Pyraclostrobin**	0.0020	U	ug/L	P355221	
		Primidone**	0.0040	U	ug/L	P355221	
		Linuron	0.0040	U	ug/L	P355221	
		Acetaminophen**	0.0080	U	ug/L	P355221	
		Fenuron	0.016	U	ug/L	P355221	
		Imazapyr**	0.066		ug/L	P355221	
		Carbamazepine**	8.0E-04	U	ug/L	P355221	
		Fluridone**	0.0052		ug/L	P355221	
		Hydrocodone**	8.0E-04	U	ug/L	P355221	
		Naproxen**	0.0080	U	ug/L	P355221	
		Ibuprofen**	0.020	U	ug/L	P355221	
		Sucralose**	0.079		ug/L	P355225	
		Acesulfame K**	0.10	U	ug/L	P355225	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355151

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355152

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355538

Component	Result	Code	Units
Copper	0.20	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355441

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355219

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355401

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355244

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355231

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355157

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

Reference Method: EPA 8321B
Batch ID: P355221

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	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355221

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355225

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P355707

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

Reference Method: SM 2540 D-97
Batch ID: P355513

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P356007

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355711

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P355327

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: P355158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	105		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Silver	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	102		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355219

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355401

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355244

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355231

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355157

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

Reference Method: EPA 8321B
Batch ID: P355221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.0		P	40 - 150
Acetaminophen	105		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	92.0		P	40 - 150
Diuron	74.8		P	40 - 150
Fenuron	95.9		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	91.1		P	40 - 150
Ibuprofen	72.7		P	40 - 150
Imazapyr	105		P	40 - 150
Imidacloprid	101		P	40 - 160
Linuron	71.7		P	40 - 150
MCPP	111		P	40 - 150
Naproxen	88.0		P	40 - 150
Primidone	95.6		P	40 - 150
Pyraclostrobin	56.6		P	40 - 150
Triclopyr	69.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
Sucralose	114		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P355707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355327

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043231	Iron	100	101	P/P	70 - 130
2043231	Zinc	101	103	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043231	Arsenic	113	113	P/P	80 - 120
2043231	Cadmium	99.5	102	P/P	80 - 120
2043231	Chromium	88.7	87.3	P/P	80 - 120
2043231	Copper	102	101	P/P	80 - 120
2043231	Lead	110	110	P/P	80 - 120
2043231	Nickel	105	105	P/P	80 - 120
2043231	Silver	91.1	92.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044355	Copper	102	103	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043309	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043738	Ammonia-N	102	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043735	Kjeldahl Nitrogen	97.8	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043738	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044466	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043735	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043735	Total-P	95.3	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043754	Total-P	95.0	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043750	O-Phosphate-P	97.7	99.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P355221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043959	2,4-D	92.1	104	P/P	40 - 150
2043959	Acetaminophen	115	114	P/P	30 - 150
2043959	Bentazon	73.3	75.9	P/P	30 - 150
2043959	Carbamazepine	82.0	86.1	P/P	40 - 150
2043959	Diuron	61.3	65.9	P/P	40 - 150
2043959	Fenuron	98.7	104	P/P	40 - 150
2043959	Fluridone	109	119	P/P	40 - 150
2043959	Hydrocodone	65.4	79.8	P/P	40 - 150
2043959	Ibuprofen	67.7	71.1	P/P	40 - 150
2043959	Imazapyr	99.9	103	P/P	40 - 150
2043959	Imidacloprid	168	180	F/F	40 - 160
2043959	Linuron	67.5	73.0	P/P	40 - 150
2043959	MCP	110	128	P/P	40 - 150
2043959	Naproxen	68.0	69.0	P/P	40 - 150
2043959	Primidone	94.1	101	P/P	40 - 150
2043959	Pyraclostrobin	61.4	69.3	P/P	40 - 150
2043959	Triclopyr	51.7	68.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043566	Acesulfame K	99.8	100	P/P	40 - 150
2043566	Sucralose	114	113	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P355711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043746	Fluoride	99.0	99.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043216	Organic Carbon	94.8	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043740	Turbidity	8.72	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043753	Turbidity	3.37	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043231	Iron	0.519	Spike	P	0 - 20
2043231	Zinc	2.41	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043231	Arsenic	0.230	Spike	P	0 - 20
2043231	Cadmium	2.09	Spike	P	0 - 20
2043231	Chromium	1.56	Spike	P	0 - 20
2043231	Copper	0.612	Spike	P	0 - 20
2043231	Lead	0.542	Spike	P	0 - 20
2043231	Nickel	0.241	Spike	P	0 - 20
2043231	Silver	0.902	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044355	Copper	0.545	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043309	Ammonia-N	0.799	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043738	Ammonia-N	3.53	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043735	Kjeldahl Nitrogen	5.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043738	Kjeldahl Nitrogen	0.530	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044466	Kjeldahl Nitrogen	0.604	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043735	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043735	Total-P	1.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043754	Total-P	1.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043750	O-Phosphate-P	1.10	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P355221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043959	2,4-D	10.7	Spike	P	0 - 30
2043959	Acetaminophen	0.693	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043959	Bentazon	3.50	Spike	P	0 - 30
2043959	Carbamazepine	4.83	Spike	P	0 - 30
2043959	Diuron	7.10	Spike	P	0 - 30
2043959	Fenuron	5.25	Spike	P	0 - 30
2043959	Fluridone	8.56	Spike	P	0 - 30
2043959	Hydrocodone	19.8	Spike	P	0 - 30
2043959	Ibuprofen	4.94	Spike	P	0 - 30
2043959	Imazapyr	2.92	Spike	P	0 - 30
2043959	Imidacloprid	6.95	Spike	P	0 - 30
2043959	Linuron	7.89	Spike	P	0 - 30
2043959	MCPP	14.8	Spike	P	0 - 30
2043959	Naproxen	1.41	Spike	P	0 - 30
2043959	Primidone	6.64	Spike	P	0 - 30
2043959	Pyraclostrobin	12.1	Spike	P	0 - 30
2043959	Triclopyr	28.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043566	Acesulfame K	0.180	Spike	P	0 - 30
2043566	Sucralose	1.25	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P355707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043746	Total Alkalinity	0.211	Sample	P	0 - 1.6

Reference Method: SM 2540 D-97
Batch ID: P356007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046536	TSS	7.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043746	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043216	Organic Carbon	0.0467	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: 2043785
Field Sample ID: G2SE0044

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.9	P	30 - 160
EPA 8321B	Diuron-d6	72.9	P	30 - 160
EPA 8321B	Endothall-d6	82.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	76.1	P	30 - 160
EPA 8321B	Primidone-d5	90.7	P	30 - 160
EPA 8321B	Sucralose-d6	55.6	P	40 - 160

Lab Sample ID: 2043786
Field Sample ID: G2SE0013

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.6	P	30 - 160
EPA 8321B	Diuron-d6	77.7	P	30 - 160
EPA 8321B	Endothall-d6	81.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	78.0	P	30 - 160
EPA 8321B	Primidone-d5	93.5	P	30 - 160
EPA 8321B	Sucralose-d6	58.3	P	40 - 160

Lab Sample ID: 2043787
Field Sample ID: G2SE0045

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.2	P	30 - 160
EPA 8321B	Diuron-d6	72.8	P	30 - 160
EPA 8321B	Endothall-d6	79.2	P	40 - 160
EPA 8321B	Primidone-d5	89.6	P	30 - 160
EPA 8321B	Sucralose-d6	58.5	P	40 - 160

Lab Sample ID: 2043788
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	128	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.0	P	30 - 160
EPA 8321B	Diuron-d6	76.1	P	30 - 160
EPA 8321B	Endothall-d6	77.0	P	40 - 160
EPA 8321B	Primidone-d5	86.2	P	30 - 160
EPA 8321B	Sucralose-d6	63.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87978

Included Lab Sample IDs: 2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87979

Included Lab Sample IDs: 2043736, 2043739, 2043744, 2043745, 2043750, 2043751, 2043756, 2043757

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88014

Included Lab Sample IDs: 2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88031

Included Lab Sample IDs: 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88036

Included Lab Sample IDs: 2043735, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.2	P/P	90 - 110
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	99.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88038

Included Lab Sample IDs: 2043735, 2043738

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

Reference Method: SM 5310 B-00

Run ID: A88042

Included Lab Sample IDs: 2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88053

Included Lab Sample IDs: 2043735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	99.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88057

Included Lab Sample IDs: 2043789, 2043790, 2043791, 2043792, 2043793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.6	99.1	P/P	90 - 110
Zinc	102	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88076

Included Lab Sample IDs: 2043789, 2043790, 2043791, 2043792, 2043793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	104	P/P	90 - 110
Arsenic	104	104	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Cadmium	104	106	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Lead	102	103	P/P	90 - 110
Lead	103	102	P/P	90 - 110
Nickel	103	104	P/P	90 - 110
Nickel	104	105	P/P	90 - 110
Silver	97.2	98.3	P/P	90 - 110
Silver	98.3	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88077

Included Lab Sample IDs: 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

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

Reference Method: EPA 8321B

Run ID: A88078

Included Lab Sample IDs: 2043785, 2043786, 2043787, 2043788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.2	100	P/P	50 - 150
Acetaminophen	91.0	106	P/P	60 - 160
Bentazon	131	121	P/P	50 - 160
Carbamazepine	109	110	P/P	60 - 160
Diuron	104	99.4	P/P	60 - 150
Fenuron	102	101	P/P	60 - 150
Fluridone	108	108	P/P	60 - 160
Hydrocodone	93.2	99.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A88078

Included Lab Sample IDs: 2043785, 2043786, 2043787, 2043788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	80.9	95.6	P/P	50 - 160
Imazapyr	101	102	P/P	50 - 150
Imidacloprid	94.8	99.7	P/P	60 - 160
Linuron	101	96.8	P/P	60 - 150
MCPP	95.9	96.8	P/P	50 - 150
Naproxen	118	94.6	P/P	50 - 160
Primidone	103	93.7	P/P	60 - 160
Pyraclostrobin	101	98.9	P/P	60 - 150
Triclopyr	105	102	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A88079

Included Lab Sample IDs: 2043785, 2043786, 2043787, 2043788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.8	71.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A88081

Included Lab Sample IDs: 2043785, 2043786, 2043787, 2043788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	123	116	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88120

Included Lab Sample IDs: 2043738

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

Reference Method: SM 2320 B-97

Run ID: A88191

Included Lab Sample IDs: 2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.9	P/P	90 - 110
Total Alkalinity	98.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88191

Included Lab Sample IDs: 2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88345

Included Lab Sample IDs: 2043793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	103	104	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					8.72	
	Turbidity					3.37	
EPA 200.7 Rev. 4.4	Iron	102	100	101			0.519
	Zinc	98.4	101	103			2.41
EPA 200.8 Rev. 5.4	Arsenic	103	113	113			0.230
	Cadmium	106	99.5	102			2.09
	Chromium	105	88.7	87.3			1.56
	Copper	101	102	101			0.612
	Copper	102	102	103			0.545
	Lead	101	110	110			0.542
	Nickel	101	105	105			0.241
	Silver	99.3	91.1	92.0			0.902
EPA 350.1 Rev. 2.0	Ammonia-N	97.9	102	103			0.799
	Ammonia-N	94.8	102	96.9			3.53
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.4	97.8	104			5.67
	Kjeldahl Nitrogen	103	103	104			0.530
	Kjeldahl Nitrogen	100	103	104			0.604
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	101	102			0.494
EPA 365.1 Rev. 2.0	Total-P	98.4	95.3	94.3			1.03
	Total-P	103	95.0	97.1			1.75
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	97.7	99.8			1.10
EPA 8321B	2,4-D	95.0	92.1	104			10.7
	Acesulfame K	102	99.8	100			0.180
	Acetaminophen	105	115	114			0.693
	Bentazon	113	73.3	75.9			3.50
	Carbamazepine	92.0	82.0	86.1			4.83
	Diuron	74.8	61.3	65.9			7.10
	Fenuron	95.9	98.7	104			5.25
	Fluridone	102	109	119			8.56
	Hydrocodone	91.1	65.4	79.8			19.8
	Ibuprofen	72.7	67.7	71.1			4.94
	Imazapyr	105	99.9	103			2.92
	Imidacloprid	101	168	180			6.95
	Linuron	71.7	67.5	73.0			7.89
	MCPP	111	110	128			14.8
	Naproxen	88.0	68.0	69.0			1.41
	Primidone	95.6	94.1	101			6.64
	Pyraclostrobin	56.6	61.4	69.3			12.1
	Sucralose	114	114	113			1.25
	Triclopyr	69.9	51.7	68.6			28.1
SM 2320 B-97	Total Alkalinity	100				0.211	
SM 2540 D-97	TSS					7.41	
SM 4500 F-C-97	Fluoride	97.4	99.0	99.7			0.470
SM 5310 B-00	Organic Carbon	94.6	94.8	94.9			0.0467

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2043789, 2043790, 2043791, 2043792, 2043793

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2043789, 2043790, 2043791, 2043792, 2043793
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2043736, 2043739, 2043744, 2043745, 2043750, 2043751, 2043756, 2043757
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2043785, 2043786, 2043787, 2043788
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2043735, 2043738, 2043742, 2043743, 2043748, 2043749, 2043754, 2043755

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	11/27/2018			11/27/2018 16:56	Julia Storbeck	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043752, 2043753
EPA 200.7 Rev. 4.4	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:12	Betina Topolski	2043789
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:20	Betina Topolski	2043790
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:28	Betina Topolski	2043791
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:34	Betina Topolski	2043792
EPA 200.8 Rev. 5.4	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:37	Betina Topolski	2043793
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 07:00	Allison Taylor	2043789
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 07:38	Allison Taylor	2043792
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 07:48	Allison Taylor	2043793
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 11:30	Allison Taylor	2043789
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:47	Allison Taylor	2043790
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 12:57	Allison Taylor	2043791
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 13:35	Allison Taylor	2043792
	11/27/2018	11/27/2018 17:35	Elliott D. Healy	11/30/2018 13:45	Allison Taylor	2043793
	11/27/2018	12/04/2018 15:00	Elliott D. Healy	12/13/2018 01:13	Allison Taylor	2043793
	11/27/2018			11/29/2018 13:48	Ping Hua	2043735
	11/27/2018			11/30/2018 10:58	Ping Hua	2043738
EPA 350.1 Rev. 2.0	11/27/2018			11/30/2018 11:03	Ping Hua	2043742
	11/27/2018			11/30/2018 11:04	Ping Hua	2043743
	11/27/2018			11/30/2018 11:12	Ping Hua	2043748
	11/27/2018			11/30/2018 11:13	Ping Hua	2043749
	11/27/2018			11/30/2018 11:15	Ping Hua	2043754
	11/27/2018			11/30/2018 11:16	Ping Hua	2043755
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 10:30	Joseph Suarez	2043735
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:37	Joseph Suarez	2043742
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:39	Joseph Suarez	2043743
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:43	Joseph Suarez	2043748
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:45	Joseph Suarez	2043749
	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:47	Joseph Suarez	2043754
EPA 351.2 Rev. 2.0	11/27/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 11:48	Joseph Suarez	2043755
	11/27/2018	11/30/2018 12:15	Adrian Shelby	12/04/2018 09:31	Joseph Suarez	2043738
	11/27/2018			11/28/2018 13:48	Lauren Bottorf	2043735
	11/27/2018			11/28/2018 13:56	Lauren Bottorf	2043738
	11/27/2018			11/28/2018 13:57	Lauren Bottorf	2043742
	11/27/2018			11/28/2018 13:59	Lauren Bottorf	2043743
	11/27/2018			11/28/2018 14:00	Lauren Bottorf	2043748
	11/27/2018			11/28/2018 14:01	Lauren Bottorf	2043749
	11/27/2018			11/28/2018 14:02	Lauren Bottorf	2043754
	11/27/2018			11/28/2018 14:03	Lauren Bottorf	2043755
	11/27/2018					
	11/27/2018					

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	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 09:56	Beverly Y. Sanders	2043754
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 10:03	Beverly Y. Sanders	2043742
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 10:04	Beverly Y. Sanders	2043743
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 10:06	Beverly Y. Sanders	2043748
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 10:07	Beverly Y. Sanders	2043749
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 10:08	Beverly Y. Sanders	2043755
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 13:03	Beverly Y. Sanders	2043735
	11/27/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 13:05	Beverly Y. Sanders	2043738
EPA 365.1 Rev. 2.0 dissolved	11/27/2018			11/27/2018 15:34	Jhamieka S. Greenwood	2043750
	11/27/2018			11/27/2018 15:49	Jhamieka S. Greenwood	2043744
	11/27/2018			11/27/2018 16:00	Jhamieka S. Greenwood	2043751, 2043756
	11/27/2018			11/27/2018 16:01	Jhamieka S. Greenwood	2043757
	11/27/2018			11/27/2018 16:02	Jhamieka S. Greenwood	2043736
	11/27/2018			11/27/2018 16:03	Jhamieka S. Greenwood	2043739
EPA 8321B	11/27/2018			11/27/2018 16:04	Jhamieka S. Greenwood	2043745
	11/27/2018	11/29/2018 10:00	Hoor Shaik	12/01/2018 14:21	Juyoung Kim	2043785
	11/27/2018	11/29/2018 10:00	Hoor Shaik	12/01/2018 14:56	Juyoung Kim	2043786
	11/27/2018	11/29/2018 10:00	Hoor Shaik	12/01/2018 15:30	Juyoung Kim	2043787
	11/27/2018	11/29/2018 10:00	Hoor Shaik	12/01/2018 16:05	Juyoung Kim	2043788
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/29/2018 16:24	Rebecca Ware	2043785
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/29/2018 16:38	Rebecca Ware	2043786
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/29/2018 16:52	Rebecca Ware	2043787
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/29/2018 17:06	Rebecca Ware	2043788
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/30/2018 13:11	Rebecca Ware	2043785
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/30/2018 13:24	Rebecca Ware	2043786
	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/30/2018 13:38	Rebecca Ware	2043787
SM 2320 B-97	11/27/2018	11/29/2018 11:00	Rebecca Ware	11/30/2018 13:52	Rebecca Ware	2043788
	11/27/2018			12/05/2018 09:37	Dale L. Simmons	2043746
	11/27/2018			12/05/2018 10:31	Dale L. Simmons	2043747
	11/27/2018			12/05/2018 10:40	Dale L. Simmons	2043734
	11/27/2018			12/05/2018 10:51	Dale L. Simmons	2043737
	11/27/2018			12/05/2018 11:01	Dale L. Simmons	2043740
	11/27/2018			12/05/2018 11:11	Dale L. Simmons	2043741
	11/27/2018			12/05/2018 11:22	Dale L. Simmons	2043752
SM 2540 D-97	11/27/2018			12/05/2018 12:25	Dale L. Simmons	2043753
	11/27/2018			11/29/2018 13:42	Yijie Li	2043734, 2043737, 2043740, 2043741, 2043746, 2043747, 2043753
SM 4500 F-C-97	11/27/2018			12/10/2018 14:10	Yijie Li	2043752
	11/27/2018			12/05/2018 06:37	Dale L. Simmons	2043746
	11/27/2018			12/05/2018 07:42	Dale L. Simmons	2043747

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	11/27/2018			12/05/2018 07:50	Dale L. Simmons	2043734
	11/27/2018			12/05/2018 07:54	Dale L. Simmons	2043737
	11/27/2018			12/05/2018 07:58	Dale L. Simmons	2043740
	11/27/2018			12/05/2018 08:02	Dale L. Simmons	2043741
	11/27/2018			12/05/2018 08:06	Dale L. Simmons	2043752
	11/27/2018			12/05/2018 08:09	Dale L. Simmons	2043753
SM 5310 B-00	11/27/2018			11/29/2018 07:06	Megan Treadwell	2043735
	11/27/2018			11/29/2018 07:20	Megan Treadwell	2043738
	11/27/2018			11/29/2018 07:33	Megan Treadwell	2043742
	11/27/2018			11/29/2018 07:46	Megan Treadwell	2043743
	11/27/2018			11/29/2018 08:14	Megan Treadwell	2043748
	11/27/2018			11/29/2018 08:27	Megan Treadwell	2043749
	11/27/2018			11/29/2018 08:41	Megan Treadwell	2043754
	11/27/2018			11/29/2018 08:54	Megan Treadwell	2043755