

Chemical Analysis Report

SE-DIST-2019-10-31-01

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

Event Description: **SMP-SLE Boat**
Request ID: **RQ-2019-10-28-16**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-NOV-2019 10:04

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

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Great Pocket @ Marker 8

Collection Date/Time: 10/30/2019 11:25

Field ID: G2SE0033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132746	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P373530	
	EPA 300.0	Bromide	64		mg Br/L	P373777	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P373988	
	SM 2540 D-97	TSS	6	I	mg/L	P373642	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P373994	
2132747	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P373833	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P373670	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P373921	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P373610	
2132748	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P373550	

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: SLE near Hoggs Cove

Collection Date/Time: 10/30/2019 11:55

Field ID: G2SE0046

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132740	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P373530	
	EPA 300.0	Bromide	55		mg Br/L	P373777	
	SM 2320 B-97	Total Alkalinity	125		mg CaCO3/L	P373988	
	SM 2540 D-97	TSS	6	IA	mg/L	P373642	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P373994	
2132741	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P373833	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P373670	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P373921	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P373610	
2132742	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P373550	

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: Manatee Pocket Center

Collection Date/Time: 10/30/2019 12:30

Field ID: G2SE0052

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132749	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P373530	
	EPA 300.0	Bromide	53		mg Br/L	P373777	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P373988	
	SM 2540 D-97	TSS	3	IA	mg/L	P373643	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P373994	
2132750	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P373833	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373670	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P373921	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P373610	
2132751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P373550	
2132762	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P373797	
		Manganese	5.7	I	ug/L	P373797	
		Zinc	20	U	ug/L	P373797	
	EPA 200.8 Rev. 5.4	Aluminum	94	I	ug/L	P373797	
		Antimony	0.50	U	ug/L	P373797	
		Arsenic	3.0		ug/L	P373797	
		Cadmium	0.20	U	ug/L	P373797	
		Chromium	4.0	U	ug/L	P373797	
		Copper	4.3		ug/L	P373797	
		Lead	2.0	U	ug/L	P373797	
		Nickel	5.0	U	ug/L	P373797	
		Selenium	2.0	U	ug/L	P373797	
		Silver	0.10	U	ug/L	P373797	
		Thallium	1.0	U	ug/L	P373797	

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 11/11/2019.

Sample Location: North Fork SLR @ Veteran Memorial Park

Collection Date/Time: 10/30/2019 14:10

Field ID: G2SE0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132743	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P373530	
	EPA 300.0	Bromide	9.9		mg Br/L	P373777	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P373971	
	SM 2540 D-97	TSS	6	I	mg/L	P373641	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P373975	
2132744	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P373833	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.079		mg N/L	P373670	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P373921	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P373609	
2132745	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P373550	
2132760	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P373607	
		2,4-D	0.11		ug/L	P373553	MS
		AMPA**	0.10	U	ug/L	P373607	
		Sucralose**	0.17	I	ug/L	P373607	
		Acetaminophen**	0.0080	U	ug/L	P373553	
		Acetamiprid**	0.0020	U	ug/L	P373553	
		Endothall**	0.25	U	ug/L	P373607	
		Glufosinate**	0.10	U	ug/L	P373607	
		Glyphosate**	0.19	I	ug/L	P373607	
		Afidopyropen**	0.0020	UJ	ug/L	P373553	
		Bentazon	0.016		ug/L	P373553	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373553	
		Carbamazepine**	0.0016	I	ug/L	P373553	
		Clothianidin**	0.0061	I	ug/L	P373553	
		Dinotefuran**	0.0020	U	ug/L	P373553	
		Diuron	0.092		ug/L	P373553	
		Fenuron	0.016	U	ug/L	P373553	
		Fluridone**	0.0097		ug/L	P373553	
		Imazapyr**	0.38		ug/L	P373553	
		Hydrocodone**	0.0020	U	ug/L	P373553	
		Ibuprofen**	0.020	U	ug/L	P373553	
		Imidacloprid	0.034		ug/L	P373553	MS
		Linuron	0.0040	U	ug/L	P373553	
		Mandestrobin**	0.0020	UJ	ug/L	P373553	
		MCP	0.0027	I	ug/L	P373553	MS
		Naproxen**	0.0080	U	ug/L	P373553	
		Primidone**	0.0040	U	ug/L	P373553	
		Pyraclostrobin**	0.0020	U	ug/L	P373553	
		Thiamethoxam**	0.0026	I	ug/L	P373553	
		Tolfenpyrad**	0.0020	U	ug/L	P373553	
		Triclopyr**	0.0040	U	ug/L	P373553	
2132761	EPA 200.7 Rev. 4.4	Iron	210		ug/L	P373645	

Field ID: G2SE0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132761	EPA 200.7 Rev. 4.4	Manganese	15.2		ug/L	P373645	
		Zinc	5.0	U	ug/L	P373645	
	EPA 200.8 Rev. 5.4	Aluminum	180		ug/L	P373645	
		Antimony	0.11	I	ug/L	P373645	
		Arsenic	2.07		ug/L	P373645	
		Cadmium	0.020	U	ug/L	P373645	
		Chromium	0.40	U	ug/L	P373645	
		Copper	1.65		ug/L	P373645	
		Lead	0.20	U	ug/L	P373645	
		Nickel	0.50	U	ug/L	P373645	
		Selenium	0.20	U	ug/L	P373645	
		Silver	0.010	U	ug/L	P373645	
		Thallium	0.10	U	ug/L	P373645	

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373530

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373645

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373797

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373645

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0
Batch ID: P373777

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373833

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373670

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373550

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

Reference Method: EPA 8321B
Batch ID: P373553

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P373553

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P373607

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

Reference Method: SM 2320 B-97
Batch ID: P373971

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

Reference Method: SM 2320 B-97
Batch ID: P373988

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

Reference Method: SM 2540 D-97
Batch ID: P373641

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P373642

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P373643

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P373994

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P373609

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

Reference Method: SM 5310 B-00
Batch ID: P373610

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: P373645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Manganese	100		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115
Manganese	101		P	85 - 115
Zinc	99.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.1		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	98.7		P	85 - 115
Cadmium	97.4		P	85 - 115
Chromium	98.0		P	85 - 115
Copper	94.7		P	85 - 115
Lead	98.5		P	85 - 115
Nickel	97.6		P	85 - 115
Selenium	93.5		P	85 - 115
Silver	103		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.3		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	94.9		P	85 - 115
Cadmium	96.6		P	85 - 115
Chromium	97.6		P	85 - 115
Copper	94.4		P	85 - 115
Lead	97.0		P	85 - 115
Nickel	96.9		P	85 - 115
Selenium	97.4		P	85 - 115
Silver	100		P	85 - 115
Thallium	99.7		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P373777

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373670

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373550

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

Reference Method: EPA 8321B
Batch ID: P373553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	136		P	40 - 160
Acetaminophen	83.8		P	30 - 160
Acetamiprid	92.7		P	40 - 160
Afidopyropen	97.4		P	40 - 160
Bentazon	105		P	30 - 160
Benzovindiflupyr	94.2		P	40 - 160
Carbamazepine	103		P	40 - 160
Clothianidin	92.3		P	40 - 160
Dinotefuran	93.2		P	40 - 160
Diuron	100		P	40 - 160
Fenuron	99.4		P	40 - 160
Fluridone	96.4		P	40 - 160
Hydrocodone	89.0		P	40 - 160
Ibuprofen	93.5		P	30 - 160
Imazapyr	92.6		P	40 - 160
Imidacloprid	111		P	40 - 160
Linuron	82.0		P	40 - 160
Mandestrobin	93.1		P	40 - 160
MCPP	149		P	40 - 160
Naproxen	73.0		P	40 - 160
Primidone	92.3		P	40 - 160
Pyraclostrobin	83.8		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P373553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	98.8		P	40 - 160
Tolfenpyrad	52.0		P	40 - 160
Triclopyr	117		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	51.3		P	40 - 150
AMPA	85.5		P	40 - 150
Endothall	97.1		P	40 - 150
Glufosinate	103		P	40 - 150
Glyphosate	89.7		P	40 - 140
Sucralose	86.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P373971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P373988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P373994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P373609

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

Reference Method: SM 5310 B-00
Batch ID: P373610

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132639	Iron	105	106	P/P	80 - 120
2132639	Manganese	101	101	P/P	80 - 120
2132639	Zinc	104	104	P/P	80 - 120
2132829	Iron	107		P	80 - 120
2132829	Manganese	103		P	80 - 120
2132829	Zinc	106		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132762	Iron	97.6	98.0	P/P	70 - 130
2132762	Manganese	93.8	93.0	P/P	70 - 130
2132762	Zinc	102	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132639	Aluminum	99.0	97.7	P/P	80 - 120
2132639	Antimony	104	104	P/P	80 - 120
2132639	Arsenic	101	101	P/P	80 - 120
2132639	Cadmium	100	97.7	P/P	80 - 120
2132639	Chromium	101	101	P/P	80 - 120
2132639	Copper	94.3	91.9	P/P	80 - 120
2132639	Lead	102	102	P/P	80 - 120
2132639	Nickel	100	100	P/P	80 - 120
2132639	Selenium	87.0	85.9	P/P	80 - 120
2132639	Silver	104	103	P/P	80 - 120
2132639	Thallium	108	108	P/P	80 - 120
2132829	Aluminum	96.9		P	80 - 120
2132829	Antimony	105		P	80 - 120
2132829	Arsenic	103		P	80 - 120
2132829	Cadmium	101		P	80 - 120
2132829	Chromium	100		P	80 - 120
2132829	Copper	99.7		P	80 - 120
2132829	Lead	102		P	80 - 120
2132829	Nickel	97.2		P	80 - 120
2132829	Selenium	94.9		P	80 - 120
2132829	Silver	103		P	80 - 120
2132829	Thallium	108		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132762	Aluminum	101	103	P/P	70 - 130
2132762	Antimony	104	105	P/P	70 - 130
2132762	Arsenic	108	105	P/P	70 - 130
2132762	Cadmium	92.5	94.5	P/P	70 - 130
2132762	Chromium	81.0	80.1	P/P	70 - 130
2132762	Copper	84.0	84.6	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132762	Lead	103	104	P/P	70 - 130
2132762	Nickel	83.6	85.0	P/P	70 - 130
2132762	Selenium	92.3	96.8	P/P	70 - 130
2132762	Silver	91.3	91.0	P/P	70 - 130
2132762	Thallium	92.5	92.1	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P373777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132743	Bromide	96.8	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131860	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132417	Kjeldahl Nitrogen	103	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132714	NO2NO3-N	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132741	Total-P	92.3	92.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132715	O-Phosphate-P	94.0	93.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132728	2,4-D	157	162	P/F	40 - 160
2132728	Acetaminophen	92.6	92.4	P/P	30 - 160
2132728	Acetamiprid	123	119	P/P	40 - 160
2132728	Afidopyropen	118	114	P/P	40 - 160
2132728	Bentazon	83.7	85.5	P/P	30 - 160
2132728	Benzovindiflupyr	101	105	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132728	Carbamazepine	117	116	P/P	40 - 160
2132728	Clothianidin	113	105	P/P	40 - 160
2132728	Dinotefuran	124	123	P/P	40 - 160
2132728	Diuron	103	105	P/P	40 - 160
2132728	Fenuron	104	103	P/P	40 - 160
2132728	Fluridone	106	111	P/P	40 - 160
2132728	Hydrocodone	108	111	P/P	40 - 160
2132728	Ibuprofen	106	112	P/P	30 - 160
2132728	Imazapyr	130	121	P/P	40 - 160
2132728	Imidacloprid	188	186	F/F	40 - 160
2132728	Linuron	85.2	93.8	P/P	40 - 160
2132728	Mandestrobin	102	104	P/P	40 - 160
2132728	MCP	169	165	F/F	40 - 160
2132728	Naproxen	106	105	P/P	40 - 160
2132728	Primidone	112	117	P/P	40 - 160
2132728	Pyraclostrobin	99.9	98.6	P/P	30 - 160
2132728	Thiamethoxam	153	153	P/P	40 - 160
2132728	Tolfenpyrad	65.6	64.9	P/P	40 - 160
2132728	Triclopyr	136	130	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132580	Acesulfame K	79.0	80.8	P/P	40 - 150
2132580	AMPA	94.5	91.7	P/P	40 - 150
2132580	Endothall	83.3	87.3	P/P	40 - 150
2132580	Glufosinate	100	98.0	P/P	40 - 150
2132580	Glyphosate	80.5	88.8	P/P	40 - 140
2132580	Sucralose	73.8	96.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132775	Fluoride	100	97.6	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P373994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131834	Fluoride	99.8	97.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132647	Organic Carbon	105	105	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P373610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132741	Organic Carbon	104	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132710	Turbidity	2.29	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132639	Iron	0.659	Spike	P	0 - 20
2132639	Manganese	0.0132	Spike	P	0 - 20
2132639	Zinc	0.289	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P373797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132762	Iron	0.398	Spike	P	0 - 20
2132762	Manganese	0.855	Spike	P	0 - 20
2132762	Zinc	0.755	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132639	Aluminum	1.01	Spike	P	0 - 20
2132639	Antimony	0.179	Spike	P	0 - 20
2132639	Arsenic	0.0211	Spike	P	0 - 20
2132639	Cadmium	2.56	Spike	P	0 - 20
2132639	Chromium	0.638	Spike	P	0 - 20
2132639	Copper	2.47	Spike	P	0 - 20
2132639	Lead	0.534	Spike	P	0 - 20
2132639	Nickel	0.237	Spike	P	0 - 20
2132639	Selenium	1.23	Spike	P	0 - 20
2132639	Silver	1.05	Spike	P	0 - 20
2132639	Thallium	0.615	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132762	Aluminum	1.74	Spike	P	0 - 20
2132762	Antimony	0.802	Spike	P	0 - 20
2132762	Arsenic	2.94	Spike	P	0 - 20
2132762	Cadmium	2.14	Spike	P	0 - 20
2132762	Chromium	1.12	Spike	P	0 - 20
2132762	Copper	0.650	Spike	P	0 - 20
2132762	Lead	0.719	Spike	P	0 - 20
2132762	Nickel	1.68	Spike	P	0 - 20
2132762	Selenium	4.84	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132762	Silver	0.277	Spike	P	0 - 20
2132762	Thallium	0.364	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P373777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132743	Bromide	0.815	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131860	Ammonia-N	0.806	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132417	Kjeldahl Nitrogen	3.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132714	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132741	Total-P	0.369	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132715	O-Phosphate-P	0.867	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P373553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132728	2,4-D	2.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132728	Acetaminophen	0.200	Spike	P	0 - 30
2132728	Acetamiprid	3.31	Spike	P	0 - 30
2132728	Afidopyropen	3.22	Spike	P	0 - 30
2132728	Bentazon	2.08	Spike	P	0 - 30
2132728	Benzovindiflupyr	3.56	Spike	P	0 - 30
2132728	Carbamazepine	1.08	Spike	P	0 - 30
2132728	Clothianidin	7.10	Spike	P	0 - 30
2132728	Dinotefuran	0.679	Spike	P	0 - 30
2132728	Diuron	1.39	Spike	P	0 - 30
2132728	Fenuron	0.564	Spike	P	0 - 30
2132728	Fluridone	4.57	Spike	P	0 - 30
2132728	Hydrocodone	3.01	Spike	P	0 - 30
2132728	Ibuprofen	6.06	Spike	P	0 - 30
2132728	Imazapyr	4.31	Spike	P	0 - 30
2132728	Imidacloprid	1.18	Spike	P	0 - 30
2132728	Linuron	9.63	Spike	P	0 - 30
2132728	Mandestrobin	2.60	Spike	P	0 - 30
2132728	MCPP	2.31	Spike	P	0 - 30
2132728	Naproxen	1.36	Spike	P	0 - 30
2132728	Primidone	4.71	Spike	P	0 - 30
2132728	Pyraclostrobin	1.31	Spike	P	0 - 30
2132728	Thiamethoxam	0.0825	Spike	P	0 - 30
2132728	Tolfenpyrad	0.963	Spike	P	0 - 30
2132728	Triclopyr	4.56	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132580	Acesulfame K	2.30	Spike	P	0 - 30
2132580	AMPA	2.41	Spike	P	0 - 30
2132580	Endothall	4.67	Spike	P	0 - 30
2132580	Glufosinate	2.47	Spike	P	0 - 30
2132580	Glyphosate	9.89	Spike	P	0 - 30
2132580	Sucralose	25.5	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P373971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132775	Total Alkalinity	0.249	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P373988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133458	Total Alkalinity	0.351	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132775	Fluoride	1.99	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P373994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131834	Fluoride	1.48	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P373609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132647	Organic Carbon	0.291	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P373610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132741	Organic Carbon	0.560	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2132760
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.0	P	30 - 160
EPA 8321B	Diuron-d6	78.9	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	31.2	P	30 - 160
EPA 8321B	Sucralose-d6	31.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95384

Included Lab Sample IDs: 2132740, 2132743, 2132746, 2132749

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95389

Included Lab Sample IDs: 2132742, 2132745, 2132748, 2132751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.0	P/P	90 - 110
O-Phosphate-P	99.0	99.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95422

Included Lab Sample IDs: 2132741, 2132744, 2132747, 2132750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	104	P/P	90 - 110
Organic Carbon	104	105	P/P	90 - 110
Organic Carbon	107	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95438

Included Lab Sample IDs: 2132741, 2132744, 2132747, 2132750

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95468

Included Lab Sample IDs: 2132741, 2132744, 2132747, 2132750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95493

Included Lab Sample IDs: 2132761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	104	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	105	102	P/P	90 - 110
Copper	104	103	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Nickel	105	104	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	104	105	P/P	90 - 110
Thallium	99.2	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95495

Included Lab Sample IDs: 2132761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	101	P/P	90 - 110
Manganese	101	103	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A95513

Included Lab Sample IDs: 2132740, 2132743, 2132746, 2132749

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

Reference Method: EPA 8321B

Run ID: A95522

Included Lab Sample IDs: 2132760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.4	62.3	P/P	60 - 160
Endothall	90.2	94.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A95523

Included Lab Sample IDs: 2132760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.5	81.7	P/P	60 - 160
Glufosinate	107	102	P/P	60 - 160
Glyphosate	98.2	92.5	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95562

Included Lab Sample IDs: 2132762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	97.3	90.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95564

Included Lab Sample IDs: 2132762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	101	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Zinc	99.9	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95575

Included Lab Sample IDs: 2132760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	116	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95588

Included Lab Sample IDs: 2132760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.9	93.5	P/P	50 - 150
Acetaminophen	105	106	P/P	60 - 160
Acetamiprid	110	109	P/P	50 - 150
Afidopyropen	105	107	P/P	50 - 150
Bentazon	103	98.8	P/P	50 - 160
Benzovindiflupyr	114	115	P/P	50 - 150
Carbamazepine	110	112	P/P	60 - 150
Clothianidin	104	93.7	P/P	60 - 150
Dinotefuran	104	105	P/P	50 - 150
Diuron	113	111	P/P	60 - 150
Fenuron	108	110	P/P	60 - 150
Fluridone	115	118	P/P	60 - 160
Hydrocodone	108	110	P/P	60 - 150
Ibuprofen	95.7	79.8	P/P	50 - 160
Imazapyr	105	93.0	P/P	50 - 150
Imidacloprid	103	110	P/P	60 - 150
Linuron	105	104	P/P	60 - 150
Mandestrobin	107	107	P/P	50 - 150
MCPP	111	97.7	P/P	50 - 150
Naproxen	90.6	86.0	P/P	50 - 160
Primidone	97.3	100	P/P	60 - 150
Pyraclostrobin	104	99.0	P/P	60 - 150
Thiamethoxam	102	105	P/P	50 - 150
Tolfenpyrad	104	105	P/P	60 - 150
Triclopyr	90.2	86.4	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95591

Included Lab Sample IDs: 2132741, 2132744, 2132747, 2132750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	99.1	P/P	90 - 110
Kjeldahl Nitrogen	99.1	99.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95603

Included Lab Sample IDs: 2132762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	101	P/P	90 - 110
Antimony	98.7	97.2	P/P	90 - 110
Cadmium	98.6	98.1	P/P	90 - 110
Chromium	100	98.0	P/P	90 - 110
Lead	96.4	95.8	P/P	90 - 110
Nickel	99.2	99.3	P/P	90 - 110
Selenium	99.3	97.5	P/P	90 - 110
Silver	97.6	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95607

Included Lab Sample IDs: 2132762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	107	109	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95613

Included Lab Sample IDs: 2132743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95613

Included Lab Sample IDs: 2132743

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

Reference Method: SM 2320 B-97

Run ID: A95617

Included Lab Sample IDs: 2132740, 2132746, 2132749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	99.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95617

Included Lab Sample IDs: 2132740, 2132746, 2132749

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95657

Included Lab Sample IDs: 2132744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95662

Included Lab Sample IDs: 2132741, 2132747, 2132750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95666

Included Lab Sample IDs: 2132762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	98.8	93.9	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								2.29	
EPA 200.7 Rev. 4.4	Iron	105			105	106	107			0.659
	Iron	109			97.6	98.0				0.398
	Manganese	100			101	101	103			0.0132
	Manganese	101			93.8	93.0				0.855
	Zinc	100			104	104	106			0.289
	Zinc	99.5			102	101				0.755
EPA 200.8 Rev. 5.4	Aluminum	98.1			99.0	97.7	96.9			1.01
	Aluminum	97.3			101	103				1.74
	Antimony	103			104	104	105			0.179
	Antimony	101			104	105				0.802
	Arsenic	98.7			101	101	103			0.0211
	Arsenic	94.9			108	105				2.94
	Cadmium	97.4			100	97.7	101			2.56
	Cadmium	96.6			92.5	94.5				2.14
	Chromium	98.0			101	101	100			0.638
	Chromium	97.6			81.0	80.1				1.12
	Copper	94.7			94.3	91.9	99.7			2.47
	Copper	94.4			84.0	84.6				0.650
	Lead	98.5			102	102	102			0.534
	Lead	97.0			103	104				0.719
	Nickel	97.6			100	100	97.2			0.237
	Nickel	96.9			83.6	85.0				1.68
	Selenium	93.5			87.0	85.9	94.9			1.23
	Selenium	97.4			92.3	96.8				4.84
	Silver	103			104	103	103			1.05
	Silver	100			91.3	91.0				0.277
	Thallium	103			108	108	108			0.615
	Thallium	99.7			92.5	92.1				0.364
EPA 300.0	Bromide	100			96.8	98.4				0.815
EPA 350.1 Rev. 2.0	Ammonia-N	99.8			102	103				0.806
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.6			103	98.8				3.85
EPA 353.2 Rev. 2.0	NO2NO3-N	100			97.8					0.0
EPA 365.1 Rev. 2.0	Total-P	101			92.3	92.7				0.369
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1			94.0	93.1				0.867
EPA 8321B	2,4-D	136			157	162				2.60
	Acesulfame K	51.3			79.0	80.8				2.30
	Acetaminophen	83.8			92.6	92.4				0.200
	Acetamiprid	92.7			123	119				3.31
	Afidopyropen	97.4			118	114				3.22
	AMPA	85.5			94.5	91.7				2.41
	Bentazon	105			83.7	85.5				2.08
	Benzovindiflupyr	94.2			101	105				3.56
	Carbamazepine	103			117	116				1.08
	Clothianidin	92.3			113	105				7.10
	Dinotefuran	93.2			124	123				0.679
	Diuron	100			103	105				1.39
	Endothall	97.1			83.3	87.3				4.67
	Fenuron	99.4			104	103				0.564
	Fluridone	96.4			106	111				4.57
	Glufosinate	103			100	98.0				2.47
	Glyphosate	89.7			80.5	88.8				9.89
	Hydrocodone	89.0			108	111				3.01
	Ibuprofen	93.5			106	112				6.06

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imazapyr	92.6	130	121		4.31
	Imidacloprid	111	188	186		1.18
	Linuron	82.0	85.2	93.8		9.63
	Mandestrobin	93.1	102	104		2.60
	MCPP	149	169	165		2.31
	Naproxen	73.0	106	105		1.36
	Primidone	92.3	112	117		4.71
	Pyraclostrobin	83.8	99.9	98.6		1.31
	Sucralose	86.2	73.8	96.2		25.5
	Thiamethoxam	98.8	153	153		0.0825
	Tolfenpyrad	52.0	65.6	64.9		0.963
	Triclopyr	117	136	130		4.56
SM 2320 B-97	Total Alkalinity	100			0.249	
	Total Alkalinity	99.0			0.351	
SM 4500 F-C-97	Fluoride	97.8	100	97.6		1.99
	Fluoride	96.5	99.8	97.0		1.48
SM 5310 B-00	Organic Carbon	103	105	105		0.291
	Organic Carbon	101	104	105		0.560

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2132740, 2132743, 2132746, 2132749
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2132761, 2132762
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2132761, 2132762
EPA 300.0 / E31780	Bromide in aqueous matrices	2132740, 2132743, 2132746, 2132749
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2132741, 2132744, 2132747, 2132750
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2132741, 2132744, 2132747, 2132750
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2132741, 2132744, 2132747, 2132750
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2132741, 2132744, 2132747, 2132750
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2132742, 2132745, 2132748, 2132751
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2132760
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2132760
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2132740, 2132743, 2132746, 2132749
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2132740, 2132743, 2132746, 2132749
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2132740, 2132743, 2132746, 2132749
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2132741, 2132744, 2132747, 2132750

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	10/31/2019			10/31/2019 16:52	Rosalyn Ballman	2132740, 2132743, 2132746, 2132749
EPA 200.7 Rev. 4.4	10/31/2019	11/04/2019 12:55	Elliott D. Healy	11/05/2019 16:26	Betina Topolski	2132761
	10/31/2019	11/06/2019 14:20	Elliott D. Healy	11/07/2019 13:46	Alexander Thompson	2132762
EPA 200.8 Rev. 5.4	10/31/2019	11/04/2019 12:55	Elliott D. Healy	11/05/2019 21:32	Robert K Palmer	2132761
	10/31/2019	11/06/2019 14:20	Elliott D. Healy	11/07/2019 13:32	Robert K Palmer	2132762
	10/31/2019	11/06/2019 14:20	Elliott D. Healy	11/08/2019 01:06	Robert K Palmer	2132762
	10/31/2019	11/06/2019 14:20	Elliott D. Healy	11/11/2019 07:53	Robert K Palmer	2132762
	10/31/2019	11/06/2019 14:20	Elliott D. Healy	11/12/2019 15:13	Robert K Palmer	2132762
EPA 300.0	10/31/2019			11/05/2019 10:09	Jhamieka S. Greenwood	2132743
	10/31/2019			11/05/2019 11:17	Jhamieka S. Greenwood	2132740
	10/31/2019			11/05/2019 11:34	Jhamieka S. Greenwood	2132746
	10/31/2019			11/05/2019 11:51	Jhamieka S. Greenwood	2132749
EPA 350.1 Rev. 2.0	10/31/2019			11/01/2019 14:04	Ping Hua	2132741
	10/31/2019			11/01/2019 14:05	Ping Hua	2132744
	10/31/2019			11/01/2019 14:07	Ping Hua	2132747
	10/31/2019			11/01/2019 14:08	Ping Hua	2132750
EPA 351.2 Rev. 2.0	10/31/2019	11/07/2019 11:50	Sima Feizi	11/08/2019 11:20	Virginia P. Brown	2132741
	10/31/2019	11/07/2019 11:50	Sima Feizi	11/08/2019 11:22	Virginia P. Brown	2132744
	10/31/2019	11/07/2019 11:50	Sima Feizi	11/08/2019 11:27	Virginia P. Brown	2132747
	10/31/2019	11/07/2019 11:50	Sima Feizi	11/08/2019 11:28	Virginia P. Brown	2132750
EPA 353.2 Rev. 2.0	10/31/2019			11/05/2019 08:52	Beverly Y. Sanders	2132741
	10/31/2019			11/05/2019 08:53	Beverly Y. Sanders	2132744
	10/31/2019			11/05/2019 08:54	Beverly Y. Sanders	2132747
	10/31/2019			11/05/2019 08:55	Beverly Y. Sanders	2132750
EPA 365.1 Rev. 2.0	10/31/2019	11/08/2019 13:00	Lipi Saha	11/12/2019 13:04	Benjamin T. Nordmann	2132744
	10/31/2019	11/08/2019 13:00	Lipi Saha	11/12/2019 15:43	Benjamin T. Nordmann	2132741
	10/31/2019	11/08/2019 13:00	Lipi Saha	11/12/2019 15:50	Benjamin T. Nordmann	2132747
	10/31/2019	11/08/2019 13:00	Lipi Saha	11/12/2019 15:51	Benjamin T. Nordmann	2132750
EPA 365.1 Rev. 2.0 dissolved	10/31/2019			10/31/2019 16:24	Samantha Davila	2132742
	10/31/2019			10/31/2019 16:25	Samantha Davila	2132745
	10/31/2019			10/31/2019 16:30	Samantha Davila	2132748, 2132751
EPA 8321B	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/04/2019 15:22	Rebecca Ware	2132760
	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/05/2019 14:27	Rebecca Ware	2132760
	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/06/2019 18:01	Rebecca Ware	2132760
	10/31/2019	11/06/2019 08:00	Hoor Shaik	11/09/2019 13:49	Juyoung Kim	2132760
SM 2320 B-97	10/31/2019			11/08/2019 08:37	Dale L. Simmons	2132743
	10/31/2019			11/09/2019 00:56	Dale L. Simmons	2132740
	10/31/2019			11/09/2019 01:08	Dale L. Simmons	2132746
	10/31/2019			11/09/2019 01:20	Dale L. Simmons	2132749
SM 2540 D-97	10/31/2019			11/01/2019 14:20	Rosalyn Ballman	2132740, 2132743, 2132746, 2132749

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	10/31/2019			11/08/2019 08:37	Dale L. Simmons	2132743
	10/31/2019			11/08/2019 23:00	Dale L. Simmons	2132740
	10/31/2019			11/08/2019 23:04	Dale L. Simmons	2132746
	10/31/2019			11/08/2019 23:08	Dale L. Simmons	2132749
SM 5310 B-00	10/31/2019			11/01/2019 20:37	Madeline Funaro	2132744
	10/31/2019			11/02/2019 01:03	Madeline Funaro	2132741
	10/31/2019			11/02/2019 02:37	Madeline Funaro	2132747
	10/31/2019			11/02/2019 02:57	Madeline Funaro	2132750