

Chemical Analysis Report

SO-DIST-2021-06-04-01

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

Event Description: **2021 SMP : Myakka Cricks**

Request ID: **RQ-2021-05-31-50**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-JUN-2021 14:23

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Apollo Waterway EBranch

Collection Date/Time: 06/03/2021 09:35

Field ID: G3SD0208

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252395	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P399253	
	SM 2320 B-2011	Total Alkalinity	135		mg CaCO3/L	P399445	
	SM 2540 D-2011	TSS	11		mg/L	P399652	
	SM 4500 F-C-2011	Fluoride	0.89		mg F/L	P399447	
2252398	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P399516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P399467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P399731	
2252401	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P399267	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Alligator Creek @ Midway Blvd

Collection Date/Time: 06/03/2021 08:55

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252392	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P399253	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P399445	
	SM 2540 D-2011	TSS	3	IA	mg/L	P399652	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P399447	
2252393	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P399516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P399467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	9.0		mg C/L	P399731	
2252394	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P399267	
2252436	EPA 200.7 Rev. 4.4	Calcium	368		mg/L	P399507	
		Chromium	4.0	U	ug/L	P399507	
		Iron	120	U	ug/L	P399507	
		Magnesium	1.11E+03		mg/L	P399507	
		Manganese	37		ug/L	P399507	
		Zinc	20	U	ug/L	P399507	
	EPA 200.8 Rev. 5.4	Aluminum	27	I	ug/L	P399507	
		Antimony	0.24	I	ug/L	P399507	
		Arsenic	2.92		ug/L	P399507	
		Beryllium	0.040	U	ug/L	P399507	
		Cadmium	0.20	U	ug/L	P399507	
		Copper	1.6	U	ug/L	P399507	
		Lead	0.80	U	ug/L	P399507	
		Nickel	2.0	U	ug/L	P399507	
		Selenium	0.80	U	ug/L	P399507	
		Silver	0.040	U	ug/L	P399507	
		Thallium	0.40	U	ug/L	P399507	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Apollo Waterway WBranch

Collection Date/Time: 06/03/2021 10:05

Field ID: G3SD0195

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252396	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P399253	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P399445	
	SM 2540 D-2011	TSS	8	I	mg/L	P399652	
	SM 4500 F-C-2011	Fluoride	0.94		mg F/L	P399447	
2252399	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P399516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P399467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P399731	
2252402	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P399267	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Rock Creek @ Eisenhower Dr

Collection Date/Time: 06/03/2021 10:30

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252389	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P399253	
	SM 2320 B-2011	Total Alkalinity	110	A	mg CaCO3/L	P399445	
	SM 2540 D-2011	TSS	6	IA	mg/L	P399651	
	SM 4500 F-C-2011	Fluoride	0.99		mg F/L	P399447	
2252390	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P399581	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P399563	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P399731	
2252391	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P399267	
2252434	EPA 8321B	Acesulfame K	0.10	U	ug/L	P399276	
		2,4-D	0.0020	U	ug/L	P399076	
		AMPA	1.0	U	ug/L	P399276	
		2,4,5-T	0.0040	U	ug/L	P399076	
		Acetaminophen	0.0080	U	ug/L	P399076	
		Endothall	0.25	U	ug/L	P399276	
		Acetamiprid	0.0020	U	ug/L	P399076	
		Glufosinate	1.0	U	ug/L	P399276	
		Glyphosate	1.0	U	ug/L	P399276	
		Afidopyropen	0.0020	U	ug/L	P399076	
		Sucralose	0.26		ug/L	P399276	
		Bentazon	0.0027	I	ug/L	P399076	
		Benzovindiflupyr	0.0020	U	ug/L	P399076	
		Carbamazepine	8.0E-04	U	ug/L	P399076	
		Clothianidin	0.0020	U	ug/L	P399076	
		Dinotefuran	0.0032	I	ug/L	P399076	
		Diuron	0.0020	U	ug/L	P399076	
		Fenuron	0.016	U	ug/L	P399076	
		Fluridone	0.012		ug/L	P399076	
		Imazapyr	0.0094	I	ug/L	P399076	
		Hydrocodone	0.0020	U	ug/L	P399076	
		Ibuprofen	0.020	U	ug/L	P399076	
		Imidacloprid	0.0033	I	ug/L	P399076	
		Linuron	0.0040	U	ug/L	P399076	
		Mandestrobin	0.0020	U	ug/L	P399076	
		MCP	0.0020	U	ug/L	P399076	
		Naproxen	0.0080	U	ug/L	P399076	
		Primidone	0.0040	U	ug/L	P399076	
		Pyraclostrobin	0.0020	U	ug/L	P399076	
		Thiamethoxam	0.0020	U	ug/L	P399076	
		Tolfenpyrad	0.0020	U	ug/L	P399076	
		Triclopyr	0.0040	U	ug/L	P399076	
2252435	EPA 200.7 Rev. 4.4	Calcium	323		mg/L	P399507	

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252435	EPA 200.7 Rev. 4.4	Chromium	3.0	U	ug/L	P399507	
		Iron	180	I	ug/L	P399507	
		Magnesium	847		mg/L	P399507	
		Manganese	24		ug/L	P399507	
	EPA 200.8 Rev. 5.4	Zinc	15	U	ug/L	P399507	
		Aluminum	153		ug/L	P399507	
		Antimony	0.20	U	ug/L	P399507	
		Arsenic	2.12		ug/L	P399507	
		Beryllium	0.040	U	ug/L	P399507	
		Cadmium	0.20	U	ug/L	P399507	
		Copper	1.6	U	ug/L	P399507	
		Lead	0.80	U	ug/L	P399507	
		Nickel	2.0	U	ug/L	P399507	
		Selenium	0.80	U	ug/L	P399507	
		Silver	0.040	U	ug/L	P399507	
		Thallium	0.40	U	ug/L	P399507	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Myakka River (Tidal) @ US 41

Collection Date/Time: 06/03/2021 11:05

Field ID: G3SD0068

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2252397	EPA 180.1 Rev. 2.0	Turbidity	3.5	A	NTU	P399254	
	SM 2320 B-2011	Total Alkalinity	103		mg CaCO3/L	P399445	
	SM 2540 D-2011	TSS	8	I	mg/L	P399652	
	SM 4500 F-C-2011	Fluoride	0.88		mg F/L	P399447	
2252400	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P399516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P399467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P399731	
2252403	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P399268	

Ref. Method and Comment:

SM 2540 D-2011: 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: P399253

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399254

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P399507

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399507

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	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 350.1 Rev. 2.0
Batch ID: P399516

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399581

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399467

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: P399563

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399267

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399268

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

Reference Method: EPA 8321B
Batch ID: P399076

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P399076

Component	Result	Code	Units
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: P399276

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-2011
Batch ID: P399445

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

Reference Method: SM 2540 D-2011
Batch ID: P399651

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P399652

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399447

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P399731

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: P399507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Chromium	94.4		P	85 - 115
Iron	105		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	101		P	85 - 115
Zinc	95.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.8		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	100		P	85 - 115
Beryllium	87.2		P	85 - 115
Cadmium	101		P	85 - 115
Copper	96.8		P	85 - 115
Lead	107		P	85 - 115
Nickel	96.4		P	85 - 115
Selenium	97.2		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399581

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399467

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P399298

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399267

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399268

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

Reference Method: EPA 8321B

Batch ID: P399076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.1		P	40 - 150
2,4,5-T	103		P	40 - 150
Acetaminophen	62.1		P	30 - 150
Acetamiprid	88.6		P	40 - 150
Afidopyropen	80.4		P	40 - 150
Bentazon	110		P	30 - 150
Benzovindiflupyr	96.8		P	40 - 150
Carbamazepine	91.1		P	40 - 150
Clothianidin	76.1		P	40 - 150
Dinotefuran	71.4		P	40 - 150
Diuron	88.2		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	89.3		P	40 - 150
Hydrocodone	78.7		P	40 - 150
Ibuprofen	82.6		P	40 - 150
Imazapyr	97.3		P	40 - 150
Imidacloprid	78.0		P	40 - 150
Linuron	81.4		P	40 - 150
Mandestrobin	99.1		P	40 - 150
MCPP	105		P	40 - 150
Naproxen	84.6		P	40 - 150
Primidone	95.2		P	40 - 150
Pyraclostrobin	90.2		P	40 - 150
Thiamethoxam	82.0		P	40 - 150
Tolfenpyrad	57.3		P	30 - 150
Triclopyr	96.0		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P399276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.3		P	40 - 150
AMPA	96.4		P	40 - 150
Endothall	88.4		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P399276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glufosinate	102		P	40 - 150
Glyphosate	108		P	40 - 150
Sucralose	93.9		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P399445

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P399447

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P399731

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P399507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253569	Chromium	104	110	P/P	70 - 130
2253569	Iron	107	109	P/P	70 - 130
2253569	Manganese	105	112	P/P	70 - 130
2253569	Zinc	97.9	104	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253569	Aluminum	107	107	P/P	70 - 130
2253569	Antimony	104	105	P/P	70 - 130
2253569	Arsenic	111	111	P/P	70 - 130
2253569	Beryllium	78.5	80.1	P/P	70 - 130
2253569	Cadmium	99.9	100	P/P	70 - 130
2253569	Copper	107	107	P/P	70 - 130
2253569	Lead	119	121	P/P	70 - 130
2253569	Nickel	111	107	P/P	70 - 130
2253569	Selenium	100	99.4	P/P	70 - 130
2253569	Silver	93.2	92.6	P/P	70 - 130
2253569	Thallium	112	114	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251252	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251576	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251613	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251877	Kjeldahl Nitrogen	97.8	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252390	NO2NO3-N	97.5	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P399298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251964	Total-P	97.6	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252247	O-Phosphate-P	99.2	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252250	O-Phosphate-P	95.9	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P399076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251243	2,4-D	122	128	P/P	40 - 150
2251243	2,4,5-T	107	105	P/P	40 - 150
2251243	Acetaminophen	89.9	81.9	P/P	30 - 150
2251243	Acetamiprid	103	94.5	P/P	40 - 150
2251243	Afidopyropen	92.5	79.5	P/P	40 - 150
2251243	Bentazon	102	94.0	P/P	30 - 150
2251243	Benzovindiflupyr	98.2	97.1	P/P	40 - 150
2251243	Carbamazepine	103	102	P/P	40 - 150
2251243	Clothianidin	97.1	90.4	P/P	40 - 150
2251243	Dinotefuran	92.2	85.7	P/P	40 - 150
2251243	Diuron	79.8	75.4	P/P	40 - 150
2251243	Fenuron	102	104	P/P	40 - 150
2251243	Fluridone	85.2	80.8	P/P	40 - 150
2251243	Hydrocodone	88.8	94.3	P/P	40 - 150
2251243	Ibuprofen	80.6	79.1	P/P	40 - 150
2251243	Imazapyr	117	103	P/P	40 - 150
2251243	Imidacloprid	130	116	P/P	40 - 150
2251243	Linuron	74.9	79.9	P/P	40 - 150
2251243	Mandestrobin	98.8	95.5	P/P	40 - 150
2251243	MCPP	121	119	P/P	40 - 150
2251243	Naproxen	106	78.9	P/P	40 - 150
2251243	Primidone	124	99.4	P/P	40 - 150
2251243	Pyraclostrobin	98.9	96.1	P/P	40 - 150
2251243	Thiamethoxam	122	108	P/P	40 - 150
2251243	Tolfenpyrad	56.5	59.9	P/P	30 - 150
2251243	Triclopyr	119	113	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P399276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251952	Acesulfame K	88.6	95.7	P/P	40 - 150
2251952	AMPA	104	106	P/P	40 - 150
2251952	Endothall	113	118	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P399276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251952	Glufosinate	113	116	P/P	40 - 150
2251952	Glyphosate	118	121	P/P	40 - 150
2251952	Sucralose	94.9	99.9	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P399447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252389	Fluoride	97.0	97.0	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P399731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252393	Organic Carbon	98.8	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252377	Turbidity	3.23	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252397	Turbidity	4.86	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P399507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253569	Calcium	2.48	Spike	P	0 - 20
2253569	Chromium	6.24	Spike	P	0 - 20
2253569	Iron	0.959	Spike	P	0 - 20
2253569	Magnesium	2.44	Spike	P	0 - 20
2253569	Manganese	6.17	Spike	P	0 - 20
2253569	Zinc	5.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253569	Aluminum	0.0828	Spike	P	0 - 20
2253569	Antimony	0.790	Spike	P	0 - 20
2253569	Arsenic	0.500	Spike	P	0 - 20
2253569	Beryllium	2.00	Spike	P	0 - 20
2253569	Cadmium	0.535	Spike	P	0 - 20
2253569	Copper	0.578	Spike	P	0 - 20
2253569	Lead	1.85	Spike	P	0 - 20
2253569	Nickel	2.45	Spike	P	0 - 20
2253569	Selenium	0.930	Spike	P	0 - 20
2253569	Silver	0.564	Spike	P	0 - 20
2253569	Thallium	1.88	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251252	Ammonia-N	0.374	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251576	Ammonia-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251613	Kjeldahl Nitrogen	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251877	Kjeldahl Nitrogen	3.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252390	NO2NO3-N	0.512	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251964	Total-P	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252247	O-Phosphate-P	0.505	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252250	O-Phosphate-P	2.11	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P399076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251243	2,4-D	4.60	Spike	P	0 - 30
2251243	2,4,5-T	1.50	Spike	P	0 - 30
2251243	Acetaminophen	9.36	Spike	P	0 - 30
2251243	Acetamiprid	8.91	Spike	P	0 - 30
2251243	Afidopyropen	15.1	Spike	P	0 - 30
2251243	Bentazon	8.47	Spike	P	0 - 30
2251243	Benzovindiflupyr	1.20	Spike	P	0 - 30
2251243	Carbamazepine	0.696	Spike	P	0 - 30
2251243	Clothianidin	7.13	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P399076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251243	Dinotefuran	7.30	Spike	P	0 - 30
2251243	Diuron	5.56	Spike	P	0 - 30
2251243	Fenuron	2.56	Spike	P	0 - 30
2251243	Fluridone	5.29	Spike	P	0 - 30
2251243	Hydrocodone	5.95	Spike	P	0 - 30
2251243	Ibuprofen	1.86	Spike	P	0 - 30
2251243	Imazapyr	7.71	Spike	P	0 - 30
2251243	Imidacloprid	12.1	Spike	P	0 - 30
2251243	Linuron	6.44	Spike	P	0 - 30
2251243	Mandestrobin	3.39	Spike	P	0 - 30
2251243	MCPPP	1.91	Spike	P	0 - 30
2251243	Naproxen	29.7	Spike	P	0 - 30
2251243	Primidone	21.9	Spike	P	0 - 30
2251243	Pyraclostrobin	2.81	Spike	P	0 - 30
2251243	Thiamethoxam	12.3	Spike	P	0 - 30
2251243	Tolfenpyrad	5.84	Spike	P	0 - 30
2251243	Triclopyr	5.64	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P399276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251952	Acesulfame K	7.77	Spike	P	0 - 30
2251952	AMPA	2.10	Spike	P	0 - 30
2251952	Endothall	3.74	Spike	P	0 - 30
2251952	Glufosinate	2.06	Spike	P	0 - 30
2251952	Glyphosate	3.11	Spike	P	0 - 30
2251952	Sucralose	4.32	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P399445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252389	Total Alkalinity	0.687	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P399447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252389	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P399731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252393	Organic Carbon	0.289	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2252434

Field Sample ID: G3SD0070

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.1	P	30 - 160
EPA 8321B	Diuron-d6	69.4	P	30 - 160
EPA 8321B	Endothall-d6	92.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	39.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.4	P	30 - 160
EPA 8321B	Primidone-d5	80.2	P	30 - 160
EPA 8321B	Sucralose-d6	98.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105885

Included Lab Sample IDs: 2252389, 2252392, 2252395, 2252396, 2252397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105889

Included Lab Sample IDs: 2252390, 2252393, 2252398, 2252399, 2252400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105891

Included Lab Sample IDs: 2252391, 2252394, 2252401, 2252402, 2252403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.7	P/P	90 - 110
O-Phosphate-P	98.7	98.6	P/P	90 - 110
O-Phosphate-P	99.4	99.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105919

Included Lab Sample IDs: 2252434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	146	120	P/P	60 - 160
Endothall	105	90.1	P/P	60 - 160
Sucralose	112	123	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A105927

Included Lab Sample IDs: 2252434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	120	P/P	60 - 160
Glufosinate	116	126	P/P	60 - 160
Glyphosate	117	131	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105954

Included Lab Sample IDs: 2252390, 2252393, 2252398, 2252399, 2252400

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

Reference Method: SM 2320 B-2011

Run ID: A105969

Included Lab Sample IDs: 2252389, 2252392, 2252395, 2252396, 2252397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	97.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A105969

Included Lab Sample IDs: 2252389, 2252392, 2252395, 2252396, 2252397

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105993

Included Lab Sample IDs: 2252393, 2252398, 2252399, 2252400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.1	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106020

Included Lab Sample IDs: 2252393, 2252398, 2252399, 2252400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106024

Included Lab Sample IDs: 2252390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106028

Included Lab Sample IDs: 2252435, 2252436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.3	97.7	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Beryllium	98.4	97.4	P/P	90 - 110
Cadmium	99.3	101	P/P	90 - 110
Copper	99.1	100	P/P	90 - 110
Lead	108	109	P/P	90 - 110
Nickel	98.8	100	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	98.6	98.9	P/P	90 - 110
Thallium	95.0	94.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106030

Included Lab Sample IDs: 2252435, 2252436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.5	103	P/P	90 - 110
Chromium	94.5	97.5	P/P	90 - 110
Iron	101	106	P/P	90 - 110
Magnesium	100	104	P/P	90 - 110
Manganese	98.5	102	P/P	90 - 110
Zinc	94.3	93.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106040
Included Lab Sample IDs: 2252434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.7	93.3	P/P	50 - 150
2,4,5-T	115	119	P/P	50 - 150
Acetaminophen	92.3	93.2	P/P	60 - 160
Acetamiprid	107	107	P/P	50 - 150
Afidopyropen	81.5	104	P/P	50 - 150
Bentazon	138	133	P/P	50 - 160
Benzovindiflupyr	113	122	P/P	50 - 150
Carbamazepine	109	105	P/P	60 - 150
Clothianidin	103	107	P/P	60 - 150
Dinotefuran	102	104	P/P	50 - 150
Diuron	112	123	P/P	60 - 160
Fenuron	92.4	100	P/P	60 - 150
Fluridone	103	99.2	P/P	60 - 160
Hydrocodone	93.8	88.0	P/P	60 - 150
Ibuprofen	87.1	123	P/P	50 - 160
Imazapyr	113	107	P/P	50 - 150
Imidacloprid	93.8	89.7	P/P	60 - 150
Linuron	99.6	107	P/P	60 - 150
Mandestrobin	104	98.1	P/P	50 - 150
MCPP	126	129	P/P	50 - 150
Naproxen	111	87.0	P/P	50 - 160
Primidone	105	97.6	P/P	60 - 150
Pyraclostrobin	104	105	P/P	60 - 150
Thiamethoxam	99.0	97.9	P/P	50 - 150
Tolfenpyrad	100	102	P/P	60 - 150
Triclopyr	115	112	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A106075
Included Lab Sample IDs: 2252390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	99.1	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A106083
Included Lab Sample IDs: 2252390, 2252393, 2252398, 2252399, 2252400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	97.8	P/P	90 - 110
Organic Carbon	97.8	98.9	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.23	
	Turbidity					4.86	
EPA 200.7 Rev. 4.4	Calcium	102					2.48
	Chromium	94.4	104	110			6.24
	Iron	105	107	109			0.959
	Magnesium	102					2.44
	Manganese	101	105	112			6.17
	Zinc	95.1	97.9	104			5.58
EPA 200.8 Rev. 5.4	Aluminum	94.8	107	107			0.0828
	Antimony	100	104	105			0.790
	Arsenic	100	111	111			0.500
	Beryllium	87.2	78.5	80.1			2.00
	Cadmium	101	99.9	100			0.535
	Copper	96.8	107	107			0.578
	Lead	107	119	121			1.85
	Nickel	96.4	111	107			2.45
	Selenium	97.2	100	99.4			0.930
	Silver	101	93.2	92.6			0.564
	Thallium	103	114	112			1.88
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	100	99.8			0.374
	Ammonia-N	98.2	100	100			0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	109	106			2.27
	Kjeldahl Nitrogen	99.3	97.8	102			3.35
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.5	98.0			0.512
EPA 365.1 Rev. 2.0	Total-P	102	97.6	96.5			1.06
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	99.2	98.7			0.505
	O-Phosphate-P	99.4	95.9	98.8			2.11
EPA 8321B	2,4-D	97.1	128	122			4.60
	2,4,5-T	103	107	105			1.50
	Acesulfame K	76.3	88.6	95.7			7.77
	Acetaminophen	62.1	81.9	89.9			9.36
	Acetamiprid	88.6	94.5	103			8.91
	Afidopyropen	80.4	79.5	92.5			15.1
	AMPA	96.4	104	106			2.10
	Bentazon	110	102	94.0			8.47
	Benzovindiflupyr	96.8	97.1	98.2			1.20
	Carbamazepine	91.1	102	103			0.696
	Clothianidin	76.1	90.4	97.1			7.13
	Dinotefuran	71.4	85.7	92.2			7.30
	Diuron	88.2	75.4	79.8			5.56
	Endothall	88.4	113	118			3.74
	Fenuron	103	104	102			2.56
	Fluridone	89.3	80.8	85.2			5.29
	Glufosinate	102	113	116			2.06
	Glyphosate	108	118	121			3.11
	Hydrocodone	78.7	94.3	88.8			5.95
	Ibuprofen	82.6	80.6	79.1			1.86
	Imazapyr	97.3	103	117			7.71
	Imidacloprid	78.0	116	130			12.1
	Linuron	81.4	79.9	74.9			6.44
	Mandestrobin	99.1	95.5	98.8			3.39
	MCPD	105	119	121			1.91
	Naproxen	84.6	78.9	106			29.7
	Primidone	95.2	99.4	124			21.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	90.2	96.1	98.9		2.81
	Sucralose	93.9	94.9	99.9		4.32
	Thiamethoxam	82.0	108	122		12.3
	Tolfenpyrad	57.3	59.9	56.5		5.84
	Triclopyr	96.0	113	119		5.64
SM 2320 B-2011	Total Alkalinity	98.9			0.687	
SM 4500 F-C-2011	Fluoride	98.3	97.0	97.0		0.0
SM 5310 B-2011	Organic Carbon	99.8	98.8	98.4		0.289

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2252389, 2252392, 2252395, 2252396, 2252397
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2252435, 2252436
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2252435, 2252436
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2252390, 2252393, 2252398, 2252399, 2252400
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2252390, 2252393, 2252398, 2252399, 2252400
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2252390, 2252393, 2252398, 2252399, 2252400
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2252390, 2252393, 2252398, 2252399, 2252400
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2252391, 2252394, 2252401, 2252402, 2252403
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2252434
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2252389, 2252392, 2252395, 2252396, 2252397
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2252389, 2252392, 2252395, 2252396, 2252397
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2252389, 2252392, 2252395, 2252396, 2252397
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2252390, 2252393, 2252398, 2252399, 2252400

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	06/04/2021			06/04/2021 15:02	Yen Ta	2252389, 2252392, 2252395, 2252396, 2252397
EPA 200.7 Rev. 4.4	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 15:49	Betina Topolski	2252435
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 16:01	Betina Topolski	2252435
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 16:09	Betina Topolski	2252436
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 16:21	Betina Topolski	2252436
EPA 200.8 Rev. 5.4	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 21:13	Alexander Thompson	2252435
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 21:23	Alexander Thompson	2252436
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 22:30	Alexander Thompson	2252435
	06/04/2021	06/10/2021 15:00	Elliott D. Healy	06/11/2021 22:39	Alexander Thompson	2252436
EPA 350.1 Rev. 2.0	06/04/2021			06/10/2021 13:07	Roberta Tatti	2252393
	06/04/2021			06/10/2021 13:09	Roberta Tatti	2252398
	06/04/2021			06/10/2021 13:10	Roberta Tatti	2252399
	06/04/2021			06/10/2021 13:11	Roberta Tatti	2252400
	06/04/2021			06/11/2021 14:31	Roberta Tatti	2252390
EPA 351.2 Rev. 2.0	06/04/2021	06/09/2021 13:07	Benjamin T. Nordmann	06/10/2021 12:12	Virginia P. Brown	2252393
	06/04/2021	06/09/2021 13:07	Benjamin T. Nordmann	06/10/2021 12:14	Virginia P. Brown	2252398
	06/04/2021	06/09/2021 13:07	Benjamin T. Nordmann	06/10/2021 12:16	Virginia P. Brown	2252399
	06/04/2021	06/09/2021 13:07	Benjamin T. Nordmann	06/10/2021 12:17	Virginia P. Brown	2252400
	06/04/2021	06/11/2021 14:03	Benjamin T. Nordmann	06/14/2021 14:06	Virginia P. Brown	2252390
EPA 353.2 Rev. 2.0	06/04/2021			06/04/2021 16:01	Touraj Touran	2252390
	06/04/2021			06/04/2021 16:10	Touraj Touran	2252393
	06/04/2021			06/04/2021 16:11	Touraj Touran	2252398
	06/04/2021			06/04/2021 16:12	Touraj Touran	2252399
	06/04/2021			06/04/2021 16:26	Touraj Touran	2252400
EPA 365.1 Rev. 2.0	06/04/2021	06/07/2021 13:53	Yen Ta	06/07/2021 17:01	Shengyu Ding	2252390
	06/04/2021	06/07/2021 13:53	Yen Ta	06/07/2021 17:02	Shengyu Ding	2252393
	06/04/2021	06/07/2021 13:53	Yen Ta	06/07/2021 17:03	Shengyu Ding	2252398
	06/04/2021	06/07/2021 13:53	Yen Ta	06/07/2021 17:04	Shengyu Ding	2252399
	06/04/2021	06/07/2021 13:53	Yen Ta	06/07/2021 17:05	Shengyu Ding	2252400
EPA 365.1 Rev. 2.0 dissolved	06/04/2021			06/04/2021 17:13	Ping Hua	2252402
	06/04/2021			06/04/2021 17:56	Ping Hua	2252391
	06/04/2021			06/04/2021 18:01	Ping Hua	2252394
	06/04/2021			06/04/2021 18:02	Ping Hua	2252401
	06/04/2021			06/04/2021 18:03	Ping Hua	2252403
EPA 8321B	06/04/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 14:45	Juyoung Kim	2252434
	06/04/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 15:01	Pramila Ghimire	2252434
	06/04/2021	06/07/2021 09:00	Hoor Shaik	06/12/2021 11:03	Juyoung Kim	2252434
SM 2320 B-2011	06/04/2021			06/08/2021 23:03	Dale L. Simmons	2252389
	06/04/2021			06/08/2021 23:18	Dale L. Simmons	2252392

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	06/04/2021			06/08/2021 23:34	Dale L. Simmons	2252395
	06/04/2021			06/08/2021 23:49	Dale L. Simmons	2252396
	06/04/2021			06/09/2021 00:04	Dale L. Simmons	2252397
SM 2540 D-2011	06/04/2021			06/08/2021 14:56	Yijie Li	2252389, 2252392, 2252395, 2252396, 2252397
SM 4500 F-C-2011	06/04/2021			06/08/2021 21:24	Dale L. Simmons	2252389
	06/04/2021			06/08/2021 21:38	Dale L. Simmons	2252392
	06/04/2021			06/08/2021 21:43	Dale L. Simmons	2252395
	06/04/2021			06/08/2021 21:48	Dale L. Simmons	2252396
	06/04/2021			06/08/2021 21:54	Dale L. Simmons	2252397
SM 5310 B-2011	06/04/2021			06/15/2021 09:25	Madeline Gruver	2252393
	06/04/2021			06/15/2021 12:50	Madeline Gruver	2252390
	06/04/2021			06/15/2021 13:04	Madeline Gruver	2252398
	06/04/2021			06/15/2021 13:44	Madeline Gruver	2252399
	06/04/2021			06/15/2021 14:07	Madeline Gruver	2252400