

Chemical Analysis Report

SE-DIST-2021-02-26-01

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

Event Description: **SMP - Okeechobee Monthly 02/20**
Request ID: **RQ-2021-02-08-45**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-MAR-2021 15:18

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: Lettuce Creek @ 710

Collection Date/Time: 02/25/2021 13:35

Field ID: G1SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227955	EPA 200.7 Rev. 4.4	Barium	15.9		ug/L	P394326	
		Calcium	27.5		mg/L	P394326	
		Iron	970		ug/L	P394326	
		Magnesium	5.11		mg/L	P394326	
		Manganese	13.8		ug/L	P394326	
		Potassium	3.7		mg/L	P394326	
		Sodium	26.9		mg/L	P394326	
	EPA 200.8 Rev. 5.4	Zinc	7.5	I	ug/L	P394326	
		Aluminum	180		ug/L	P394326	
		Antimony	0.064	I	ug/L	P394326	
		Arsenic	0.97		ug/L	P394326	
		Beryllium	0.022	I	ug/L	P394326	
		Boron**	34.0		ug/L	P394326	
		Cadmium	0.020	U	ug/L	P394326	
		Chromium	0.80	I	ug/L	P394326	
		Copper	0.60	I	ug/L	P394326	
		Lead	0.24	I	ug/L	P394326	
		Nickel	0.50	U	ug/L	P394326	
		Selenium	0.20	U	ug/L	P394326	
		Silver	0.010	U	ug/L	P394326	
		Thallium	0.10	U	ug/L	P394326	
	SM 2340B	Hardness	89.8		mg/L	P394326	

Sample Location: Henry Creek @ 710

Collection Date/Time: 02/25/2021 13:15

Field ID: G1SE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227934	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P394280	
	EPA 300.0 Rev. 2.1	Chloride	350		mg Cl/L	P394554	
		Sulfate	89		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	160		PCU	P394289	
	SM 2320 B-2011	Total Alkalinity	84		mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	780		mg/L	P394805	
	SM 2540 D-2011	TSS	4	I	mg/L	P394826	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P394517	
2227935	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P394442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P394540	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P394457	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P394472	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P394896	
2227936	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P394285	

Ref. Method and Comment:

SM 2540 C-2011: The reported result is consistent with the conductivity measured in the laboratory, 1515 umhos/cm.

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

Sample Location: L-63 Canal @ SE 86th Blvd

Collection Date/Time: 02/25/2021 12:50

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227931	EPA 180.1 Rev. 2.0	Turbidity	3.0	A	NTU	P394280	
	EPA 300.0 Rev. 2.1	Chloride	85		mg Cl/L	P394554	
		Sulfate	44		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	150		PCU	P394289	
	SM 2320 B-2011	Total Alkalinity	94		mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	369		mg/L	P394805	
	SM 2540 D-2011	TSS	3	I	mg/L	P394826	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P394517	
2227932	EPA 350.1 Rev. 2.0	Ammonia-N	0.067		mg N/L	P394442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P394539	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P394457	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P394370	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P394896	
2227933	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.27		mg P/L	P394285	

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: Taylor Creek @ 39th St

Collection Date/Time: 02/25/2021 12:20

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227922	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P394280	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P394554	
		Sulfate	13		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	160		PCU	P394288	
	SM 2320 B-2011	Total Alkalinity	28	A	mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	149		mg/L	P394805	
	SM 2540 D-2011	TSS	2	I	mg/L	P394826	
2227924	SM 4500 F-C-2011	Fluoride	0.043	I	mg F/L	P394517	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P394442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P394539	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P394457	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P394370	
2227926	SM 5310 B-2011	Organic Carbon	23		mg C/L	P394896	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P394285	
2227953	EPA 8321B	2,4-D	0.019		ug/L	P394255	
		Acesulfame K	0.18	I	ug/L	P394312	
		2,4,5-T	0.0040	U	ug/L	P394255	
		AMPA	0.20	I	ug/L	P394312	
		Sucralose	0.28		ug/L	P394312	
		Acetaminophen	0.010	I	ug/L	P394255	
		Acetamiprid	0.0020	U	ug/L	P394255	
		Endothall	0.25	U	ug/L	P394312	
		Glufosinate	0.10	U	ug/L	P394312	
		Glyphosate	0.10	U	ug/L	P394312	
		Afidopyropen	0.0020	U	ug/L	P394255	
		Bentazon	0.0012	I	ug/L	P394255	
		Benzovindiflupyr	0.0020	U	ug/L	P394255	
		Carbamazepine	8.0E-04	U	ug/L	P394255	
		Clothianidin	0.017		ug/L	P394255	
		Dinotefuran	0.0045	I	ug/L	P394255	
		Diuron	0.0020	U	ug/L	P394255	
		Fenuron	0.016	U	ug/L	P394255	
		Fluridone	8.0E-04	U	ug/L	P394255	
		Imazapyr	0.0074	I	ug/L	P394255	
		Hydrocodone	0.0020	U	ug/L	P394255	
		Ibuprofen	0.020	U	ug/L	P394255	
		Imidacloprid	0.0055	I	ug/L	P394255	
		Linuron	0.0040	U	ug/L	P394255	
		Mandestrobin	0.0020	U	ug/L	P394255	
		MCP	0.0020	U	ug/L	P394255	
		Naproxen	0.0080	U	ug/L	P394255	
		Primidone	0.0040	U	ug/L	P394255	
		Pyraclostrobin	0.0020	U	ug/L	P394255	

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227953	EPA 8321B	Thiamethoxam	0.0061	I	ug/L	P394255	
		Tolfenpyrad	0.0020	U	ug/L	P394255	
		Triclopyr	0.0040	U	ug/L	P394255	

Ref. Method and Comment:
SM 2540 C-2011: The reported result is consistent with the conductivity measured in the laboratory, 228 umhos/cm.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Kissimmee Upstream of 78

Collection Date/Time: 02/25/2021 11:40

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227923	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P394280	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P394554	
		Sulfate	14		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	97		PCU	P394288	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	138	A	mg/L	P394805	
	SM 2540 D-2011	TSS	5	IA	mg/L	P394826	
	SM 4500 F-C-2011	Fluoride	0.082	I	mg F/L	P394517	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P394442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P394539	
2227925	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P394457	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P394370	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P394896	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P394285	
	EPA 8321B	2,4-D	0.20		ug/L	P394255	
2227954		Acesulfame K	0.10	U	ug/L	P394312	
		2,4,5-T	0.0040	U	ug/L	P394255	
		AMPA	0.10	U	ug/L	P394312	
		Sucralose	0.30		ug/L	P394312	
		Acetaminophen	0.0080	U	ug/L	P394255	
		Acetamiprid	0.0020	U	ug/L	P394255	
		Endothall	0.25	U	ug/L	P394312	
		Glufosinate	0.10	U	ug/L	P394312	
		Glyphosate	0.10	U	ug/L	P394312	
		Afidopyropen	0.0020	U	ug/L	P394255	
		Bentazon	0.0076		ug/L	P394255	
		Benzovindiflupyr	0.0020	U	ug/L	P394255	
		Carbamazepine	8.0E-04	U	ug/L	P394255	
		Clothianidin	0.0020	U	ug/L	P394255	
		Dinotefuran	0.0020	U	ug/L	P394255	
		Diuron	0.0020	U	ug/L	P394255	
		Fenuron	0.016	U	ug/L	P394255	
		Fluridone	0.010		ug/L	P394255	
		Imazapyr	0.024		ug/L	P394255	
		Hydrocodone	0.0020	U	ug/L	P394255	
		Ibuprofen	0.020	U	ug/L	P394255	
		Imidacloprid	0.0054	I	ug/L	P394255	
		Linuron	0.0040	U	ug/L	P394255	
		Mandestrobin	0.0020	U	ug/L	P394255	
		MCP	0.0020	U	ug/L	P394255	
		Naproxen	0.0080	U	ug/L	P394255	
		Primidone	0.0040	U	ug/L	P394255	
		Pyraclostrobin	0.0020	U	ug/L	P394255	

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227954	EPA 8321B	Thiamethoxam	0.0021	I	ug/L	P394255	
		Tolfenpyrad	0.0020	U	ug/L	P394255	
		Triclopyr	0.0040	U	ug/L	P394255	

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

Sample Location: Lemkin Creek @ 78

Collection Date/Time: 02/25/2021 11:10

Field ID: G1SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227928	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P394281	
	EPA 300.0 Rev. 2.1	Chloride	190		mg Cl/L	P394554	
		Sulfate	91		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	83		PCU	P394288	
	SM 2320 B-2011	Total Alkalinity	134		mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	564		mg/L	P394805	
	SM 2540 D-2011	TSS	3	I	mg/L	P394826	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P394517	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P394442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P394539	
2227929	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P394457	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P394370	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P394896	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.061		mg P/L	P394285	
	dissolved						

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: P394280

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394281

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394326

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394326

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
Boron	2.0	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 300.0 Rev. 2.1
Batch ID: P394554

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394442

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394539

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394457

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: P394370

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

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

Reference Method: EPA 8321B
Batch ID: P394255

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394255

Component	Result	Code	Units
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
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: P394312

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 2120 B-2011

Batch ID: P394288

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011

Batch ID: P394289

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P394514

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

Reference Method: SM 2540 C-2011

Batch ID: P394805

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P394826

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P394896

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: P394326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	111		P	85 - 115
Iron	106		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	101		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.6		P	85 - 115
Antimony	98.0		P	85 - 115
Arsenic	98.2		P	85 - 115
Beryllium	89.7		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	95.3		P	85 - 115
Copper	96.2		P	85 - 115
Lead	104		P	85 - 115
Nickel	96.2		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394554

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394555

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394442

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394539

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 351.2 Rev. 2.0

Batch ID: P394540

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394457

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394370

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394472

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P394255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	129		P	30 - 160
2,4,5-T	106		P	30 - 160
Acetaminophen	138		P	30 - 160
Acetamiprid	90.7		P	30 - 160
Afidopyropen	72.0		P	30 - 160
Bentazon	88.6		P	30 - 160
Benzovindiflupyr	96.6		P	30 - 160
Carbamazepine	124		P	30 - 160
Clothianidin	125		P	30 - 160
Dinotefuran	109		P	30 - 160
Diuron	73.9		P	30 - 160
Fenuron	110		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	110		P	30 - 160
Ibuprofen	77.9		P	30 - 160
Imazapyr	115		P	30 - 160
Imidacloprid	133		P	30 - 160
Linuron	97.6		P	30 - 160
Mandestrobin	102		P	30 - 160
MCPP	129		P	30 - 160
Naproxen	77.1		P	30 - 160
Primidone	130		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P394255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	92.7		P	30 - 160
Thiamethoxam	122		P	30 - 160
Tolfenpyrad	63.3		P	30 - 160
Triclopyr	111		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	99.0		P	40 - 150
Endothall	96.7		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	70.8		P	40 - 140
Sucralose	118		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P394288

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P394289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P394514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394896

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: P394326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227481	Barium	103		P	80 - 120
2227481	Calcium	105		P	80 - 120
2227481	Iron	104		P	80 - 120
2227481	Magnesium	102		P	80 - 120
2227481	Manganese	102		P	80 - 120
2227481	Potassium	101		P	80 - 120
2227481	Sodium	105		P	80 - 120
2227481	Zinc	106		P	80 - 120
2228011	Barium	103	100	P/P	80 - 120
2228011	Calcium	105		P	80 - 120
2228011	Iron	106	103	P/P	80 - 120
2228011	Magnesium	102	99.0	P/P	80 - 120
2228011	Manganese	102	99.3	P/P	80 - 120
2228011	Potassium	102	98.5	P/P	80 - 120
2228011	Sodium	102		P	80 - 120
2228011	Zinc	110	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227481	Aluminum	93.1		P	80 - 120
2227481	Antimony	98.1		P	80 - 120
2227481	Arsenic	95.3		P	80 - 120
2227481	Beryllium	89.4		P	80 - 120
2227481	Boron	98.0		P	80 - 120
2227481	Cadmium	98.6		P	80 - 120
2227481	Chromium	94.7		P	80 - 120
2227481	Copper	95.1		P	80 - 120
2227481	Lead	105		P	80 - 120
2227481	Nickel	94.7		P	80 - 120
2227481	Selenium	91.1		P	80 - 120
2227481	Silver	102		P	80 - 120
2227481	Thallium	105		P	80 - 120
2228011	Aluminum	92.3	91.0	P/P	80 - 120
2228011	Antimony	97.0	94.7	P/P	80 - 120
2228011	Arsenic	94.9	94.4	P/P	80 - 120
2228011	Beryllium	91.7	89.4	P/P	80 - 120
2228011	Boron	93.6	93.0	P/P	80 - 120
2228011	Cadmium	96.7	95.1	P/P	80 - 120
2228011	Chromium	94.8	93.6	P/P	80 - 120
2228011	Copper	94.4	92.9	P/P	80 - 120
2228011	Lead	104	100	P/P	80 - 120
2228011	Nickel	94.2	93.4	P/P	80 - 120
2228011	Selenium	93.8	92.7	P/P	80 - 120
2228011	Silver	100	101	P/P	80 - 120
2228011	Thallium	105	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227613	Chloride	99.5		P	90 - 110
2227994	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227613	Sulfate	96.1		P	90 - 110
2227994	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227874	Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227924	Kjeldahl Nitrogen	104	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227999	Kjeldahl Nitrogen	108	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227929	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227614	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227935	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227893	O-Phosphate-P	98.7	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P394255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227432	2,4-D	83.5	84.2	P/P	30 - 160
2227432	2,4,5-T	73.1	68.7	P/P	30 - 160
2227432	Acetaminophen	92.5	104	P/P	30 - 160
2227432	Acetamiprid	87.6	92.6	P/P	30 - 160
2227432	Afidopyropen	78.4	73.5	P/P	30 - 160
2227432	Benzovindiflupyr	70.1	73.0	P/P	30 - 160
2227432	Carbamazepine	85.1	91.6	P/P	30 - 160
2227432	Clothianidin	96.3	102	P/P	30 - 160
2227432	Dinotefuran	119	126	P/P	30 - 160
2227432	Diuron	39.7	38.3	P/P	30 - 160
2227432	Fenuron	72.8	63.4	P/P	30 - 160
2227432	Fluridone	79.6	78.2	P/P	30 - 160
2227432	Hydrocodone	98.0	101	P/P	30 - 160
2227432	Ibuprofen	63.4	67.5	P/P	30 - 160
2227432	Imazapyr	60.2	62.0	P/P	30 - 160
2227432	Imidacloprid	152	150	P/P	30 - 160
2227432	Linuron	72.8	71.5	P/P	30 - 160
2227432	Mandestrobin	83.8	86.9	P/P	30 - 160
2227432	MCCP	91.9	88.5	P/P	30 - 160
2227432	Naproxen	71.4	57.7	P/P	30 - 160
2227432	Primidone	94.5	89.4	P/P	30 - 160
2227432	Pyraclostrobin	82.0	77.9	P/P	30 - 160
2227432	Thiamethoxam	133	141	P/P	30 - 160
2227432	Tolfenpyrad	58.5	58.0	P/P	30 - 160
2227432	Triclopyr	83.1	76.9	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227562	Acesulfame K	131	147	P/P	40 - 150
2227562	AMPA	110	120	P/P	40 - 150
2227562	Endothall	129	103	P/P	40 - 150
2227562	Glufosinate	96.3	106	P/P	40 - 150
2227562	Glyphosate	54.7	61.0	P/P	40 - 140
2227562	Sucralose	127	129	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P394517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227922	Fluoride	96.6	96.6	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P394896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227925	Organic Carbon	95.4	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227931	Turbidity	2.63	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227964	Turbidity	6.25	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228011	Barium	2.52	Spike	P	0 - 20
2228011	Calcium	3.03	Spike	P	0 - 20
2228011	Iron	2.27	Spike	P	0 - 20
2228011	Magnesium	2.29	Spike	P	0 - 20
2228011	Manganese	2.65	Spike	P	0 - 20
2228011	Potassium	2.57	Spike	P	0 - 20
2228011	Sodium	2.38	Spike	P	0 - 20
2228011	Zinc	2.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228011	Aluminum	1.33	Spike	P	0 - 20
2228011	Antimony	2.36	Spike	P	0 - 20
2228011	Arsenic	0.478	Spike	P	0 - 20
2228011	Beryllium	2.51	Spike	P	0 - 20
2228011	Boron	0.486	Spike	P	0 - 20
2228011	Cadmium	1.64	Spike	P	0 - 20
2228011	Chromium	1.28	Spike	P	0 - 20
2228011	Copper	1.62	Spike	P	0 - 20
2228011	Lead	3.39	Spike	P	0 - 20
2228011	Nickel	0.919	Spike	P	0 - 20
2228011	Selenium	1.13	Spike	P	0 - 20
2228011	Silver	0.493	Spike	P	0 - 20
2228011	Thallium	2.40	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227613	Chloride	1.11	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227613	Sulfate	1.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227874	Ammonia-N	0.389	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227924	Kjeldahl Nitrogen	2.72	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227999	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227929	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227614	Total-P	0.137	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227935	Total-P	0.278	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227893	O-Phosphate-P	0.0896	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P394255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227432	2,4-D	0.711	Spike	P	0 - 30
2227432	2,4,5-T	6.15	Spike	P	0 - 30
2227432	Acetaminophen	12.1	Spike	P	0 - 30
2227432	Acetamiprid	5.54	Spike	P	0 - 30
2227432	Afidopyropen	6.53	Spike	P	0 - 30
2227432	Bentazon	5.93	Spike	P	0 - 30
2227432	Benzovindiflupyr	4.08	Spike	P	0 - 30
2227432	Carbamazepine	7.35	Spike	P	0 - 30
2227432	Clothianidin	5.34	Spike	P	0 - 30
2227432	Dinotefuran	6.11	Spike	P	0 - 30
2227432	Diuron	3.27	Spike	P	0 - 30
2227432	Fenuron	13.8	Spike	P	0 - 30
2227432	Fluridone	1.20	Spike	P	0 - 30
2227432	Hydrocodone	3.20	Spike	P	0 - 30
2227432	Ibuprofen	6.31	Spike	P	0 - 30
2227432	Imazapyr	1.49	Spike	P	0 - 30
2227432	Imidacloprid	1.07	Spike	P	0 - 30
2227432	Linuron	1.71	Spike	P	0 - 30
2227432	Mandestrobin	3.64	Spike	P	0 - 30
2227432	MCPP	3.74	Spike	P	0 - 30
2227432	Naproxen	21.3	Spike	P	0 - 30
2227432	Primidone	5.58	Spike	P	0 - 30
2227432	Pyraclostrobin	5.10	Spike	P	0 - 30
2227432	Thiamethoxam	5.73	Spike	P	0 - 30
2227432	Tolfenpyrad	0.950	Spike	P	0 - 30
2227432	Triclopyr	7.75	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227562	Acesulfame K	11.4	Spike	P	0 - 30
2227562	AMPA	9.24	Spike	P	0 - 30
2227562	Endothall	23.0	Spike	P	0 - 30
2227562	Glufosinate	9.82	Spike	P	0 - 30
2227562	Glyphosate	10.8	Spike	P	0 - 30
2227562	Sucralose	1.64	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P394288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227873	Color (true)	1.06	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P394289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P394289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227997	Color (true)	3.47	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227922	Total Alkalinity	1.30	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P394805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227923	TDS	4.35	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227922	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227925	Organic Carbon	0.939	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2227953

Field Sample ID: G1SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.6	P	30 - 160
EPA 8321B	Diuron-d6	39.3	P	30 - 160
EPA 8321B	Endothall-d6	91.0	P	40 - 160
EPA 8321B	Endothall-d6	91.0	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	40 - 160
EPA 8321B	Ibuprofen-d3	56.2	P	30 - 160
EPA 8321B	Primidone-d5	74.3	P	30 - 160
EPA 8321B	Sucralose-d6	84.6	P	30 - 160
EPA 8321B	Sucralose-d6	84.6	P	30 - 160

Lab Sample ID: 2227954

Field Sample ID: G4SE0131

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.7	P	30 - 160
EPA 8321B	Diuron-d6	57.6	P	30 - 160
EPA 8321B	Endothall-d6	98.7	P	40 - 160
EPA 8321B	Endothall-d6	98.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Ibuprofen-d3	74.2	P	30 - 160
EPA 8321B	Primidone-d5	83.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.6	P	30 - 160
EPA 8321B	Sucralose-d6	97.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103799

Included Lab Sample IDs: 2227922, 2227923, 2227928, 2227931, 2227934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105
Turbidity	102	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103803

Included Lab Sample IDs: 2227926, 2227927, 2227930, 2227933, 2227936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	98.6	P/P	90 - 110
O-Phosphate-P	98.5	98.9	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103804

Included Lab Sample IDs: 2227922, 2227923, 2227928, 2227931, 2227934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115
Color (true)	102	104	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103842

Included Lab Sample IDs: 2227922, 2227923, 2227928, 2227931, 2227934

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

Reference Method: EPA 8321B

Run ID: A103843

Included Lab Sample IDs: 2227953, 2227954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.9	79.7	P/P	60 - 160
AMPA	97.4	96.5	P/P	60 - 160
Endothall	144	110	P/P	60 - 160
Glufosinate	85.0	116	P/P	60 - 160
Glyphosate	134	132	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103861

Included Lab Sample IDs: 2227924, 2227925, 2227929, 2227932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103867

Included Lab Sample IDs: 2227924, 2227925, 2227929, 2227932, 2227935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103873

Included Lab Sample IDs: 2227953, 2227954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	91.0	P/P	50 - 150
2,4,5-T	83.5	83.4	P/P	50 - 150
Acetaminophen	98.7	99.0	P/P	60 - 160
Acetamiprid	108	107	P/P	50 - 150
Afidopyropen	106	99.6	P/P	50 - 150
Bentazon	113	107	P/P	50 - 160
Benzovindiflupyr	100	94.9	P/P	50 - 160
Carbamazepine	114	107	P/P	60 - 150
Clothianidin	102	99.7	P/P	60 - 150
Dinotefuran	99.5	108	P/P	50 - 150
Diuron	84.7	84.4	P/P	60 - 160
Fenuron	99.1	97.0	P/P	60 - 150
Fluridone	124	107	P/P	60 - 160
Hydrocodone	103	105	P/P	60 - 150
Ibuprofen	82.9	80.3	P/P	50 - 160
Imazapyr	103	83.5	P/P	50 - 160
Imidacloprid	102	99.7	P/P	60 - 150
Linuron	116	108	P/P	60 - 150
Mandestrobin	109	107	P/P	50 - 150
MCPP	106	105	P/P	50 - 150
Naproxen	83.7	85.6	P/P	50 - 160
Primidone	94.2	110	P/P	60 - 150
Pyraclostrobin	111	107	P/P	60 - 150
Thiamethoxam	103	97.4	P/P	50 - 150
Tolfenpyrad	120	113	P/P	60 - 150
Triclopyr	103	92.7	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103879

Included Lab Sample IDs: 2227924, 2227925, 2227929, 2227932, 2227935

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103898

Included Lab Sample IDs: 2227955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	99.4	100	P/P	90 - 110
Iron	100	99.9	P/P	90 - 110
Magnesium	99.6	99.4	P/P	90 - 110
Manganese	100	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103898

Included Lab Sample IDs: 2227955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	100	99.2	P/P	90 - 110
Sodium	98.6	98.7	P/P	90 - 110
Zinc	95.2	96.1	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103902

Included Lab Sample IDs: 2227922, 2227923, 2227928, 2227931, 2227934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	91.5	98.0	P/P	90 - 110
Total Alkalinity	98.0	93.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103902

Included Lab Sample IDs: 2227922, 2227923, 2227928, 2227931, 2227934

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103912

Included Lab Sample IDs: 2227935

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

Reference Method: EPA 8321B

Run ID: A103914

Included Lab Sample IDs: 2227953, 2227954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	118	117	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103951

Included Lab Sample IDs: 2227924, 2227925, 2227929, 2227932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	92.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103955

Included Lab Sample IDs: 2227955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.0	99.3	P/P	90 - 110
Antimony	96.2	97.2	P/P	90 - 110
Arsenic	97.1	97.8	P/P	90 - 110
Beryllium	96.4	96.0	P/P	90 - 110
Boron	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103955

Included Lab Sample IDs: 2227955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	98.1	99.0	P/P	90 - 110
Chromium	97.1	96.9	P/P	90 - 110
Copper	95.2	95.1	P/P	90 - 110
Lead	107	108	P/P	90 - 110
Nickel	97.1	97.1	P/P	90 - 110
Selenium	96.7	97.3	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103966

Included Lab Sample IDs: 2227935

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

Reference Method: SM 5310 B-2011

Run ID: A104035

Included Lab Sample IDs: 2227924, 2227925, 2227929, 2227932, 2227935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	95.7	P/P	90 - 110
Organic Carbon	95.7	95.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.63	
	Turbidity					6.25	
EPA 200.7 Rev. 4.4	Barium	101	103	103	100		2.52
	Calcium	111	105	105			3.03
	Iron	106	104	106	103		2.27
	Magnesium	105	102	102	99.0		2.29
	Manganese	101	102	102	99.3		2.65
	Potassium	103	101	102	98.5		2.57
	Sodium	108	105	102			2.38
	Zinc	104	106	110	107		2.58
EPA 200.8 Rev. 5.4	Aluminum	95.6	92.3	91.0	93.1		1.33
	Antimony	98.0	97.0	94.7	98.1		2.36
	Arsenic	98.2	94.9	94.4	95.3		0.478
	Beryllium	89.7	91.7	89.4	89.4		2.51
	Boron	99.4	93.6	93.0	98.0		0.486
	Cadmium	98.0	96.7	95.1	98.6		1.64
	Chromium	95.3	94.8	93.6	94.7		1.28
	Copper	96.2	94.4	92.9	95.1		1.62
	Lead	104	104	100	105		3.39
	Nickel	96.2	94.2	93.4	94.7		0.919
	Selenium	97.6	93.8	92.7	91.1		1.13
	Silver	104	100	101	102		0.493
	Thallium	103	105	102	105		2.40
EPA 300.0 Rev. 2.1	Chloride	100	99.5	101		1.11	
	Sulfate	99.7	96.1	100		1.09	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	99.6	100			0.389
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	104	98.5			2.72
	Kjeldahl Nitrogen	104	108	109			1.16
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	105	108	107			0.137
	Total-P	104	102	101			0.278
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	98.7	98.8			0.0896
EPA 8321B	2,4-D	129	83.5	84.2			0.711
	2,4,5-T	106	73.1	68.7			6.15
	Acesulfame K	105	131	147			11.4
	Acetaminophen	138	92.5	104			12.1
	Acetamiprid	90.7	87.6	92.6			5.54
	Afidopyropen	72.0	78.4	73.5			6.53
	AMPA	99.0	110	120			9.24
	Bentazon	88.6					5.93
	Benzovindiflupyr	96.6	70.1	73.0			4.08
	Carbamazepine	124	85.1	91.6			7.35
	Clothianidin	125	96.3	102			5.34
	Dinotefuran	109	119	126			6.11
	Diuron	73.9	39.7	38.3			3.27
	Endothall	96.7	129	103			23.0
	Fenuron	110	72.8	63.4			13.8
	Fluridone	101	79.6	78.2			1.20
	Glufosinate	105	96.3	106			9.82
	Glyphosate	70.8	54.7	61.0			10.8
	Hydrocodone	110	98.0	101			3.20
	Ibuprofen	77.9	63.4	67.5			6.31
	Imazapyr	115	60.2	62.0			1.49
	Imidacloprid	133	152	150			1.07

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	97.6	72.8	71.5		1.71
	Mandestrobin	102	83.8	86.9		3.64
	MCCP	129	91.9	88.5		3.74
	Naproxen	77.1	71.4	57.7		21.3
	Primidone	130	94.5	89.4		5.58
	Pyraclostrobin	92.7	82.0	77.9		5.10
	Sucralose	118	129	127		1.64
	Thiamethoxam	122	133	141		5.73
	Tolfenpyrad	63.3	58.5	58.0		0.950
	Triclopyr	111	83.1	76.9		7.75
SM 2120 B-2011	Color (true)	100			1.06	
	Color (true)	102			3.47	
SM 2320 B-2011	Total Alkalinity	95.2			1.30	
SM 2540 C-2011	TDS				4.35	
SM 4500 F-C-2011	Fluoride	97.5	96.6	96.6		0.0
SM 5310 B-2011	Organic Carbon	94.6	95.4	93.8		0.939

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2227922, 2227923, 2227928, 2227931, 2227934
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2227955
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2227955
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2227922, 2227923, 2227928, 2227931, 2227934
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2227922, 2227923, 2227928, 2227931, 2227934
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2227924, 2227925, 2227929, 2227932, 2227935
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2227924, 2227925, 2227929, 2227932, 2227935
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2227924, 2227925, 2227929, 2227932, 2227935
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2227924, 2227925, 2227929, 2227932, 2227935
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2227926, 2227927, 2227930, 2227933, 2227936
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2227953, 2227954
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2227953, 2227954
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2227922, 2227923, 2227928, 2227931, 2227934
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2227922, 2227923, 2227928, 2227931, 2227934
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2227955
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2227922, 2227923, 2227928, 2227931, 2227934
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2227922, 2227923, 2227928, 2227931, 2227934
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2227922, 2227923, 2227928, 2227931, 2227934
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2227924, 2227925, 2227929, 2227932, 2227935

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	02/26/2021			02/26/2021 17:09	Yen Ta	2227922, 2227923, 2227928, 2227931, 2227934
EPA 200.7 Rev. 4.4	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/04/2021 15:14	Betina Topolski	2227955
EPA 200.8 Rev. 5.4	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/08/2021 22:13	Alexander Thompson	2227955
EPA 300.0 Rev. 2.1	02/26/2021			03/03/2021 17:39	Lipi Saha	2227922
	02/26/2021			03/03/2021 17:51	Lipi Saha	2227923
	02/26/2021			03/03/2021 18:04	Lipi Saha	2227928
	02/26/2021			03/03/2021 18:16	Lipi Saha	2227931
	02/26/2021			03/03/2021 18:52	Lipi Saha	2227934
EPA 350.1 Rev. 2.0	02/26/2021			03/03/2021 17:06	Ping Hua	2227924
	02/26/2021			03/03/2021 17:07	Ping Hua	2227925
	02/26/2021			03/03/2021 17:09	Ping Hua	2227929
	02/26/2021			03/03/2021 17:10	Ping Hua	2227932
	02/26/2021			03/03/2021 17:11	Ping Hua	2227935
EPA 351.2 Rev. 2.0	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/08/2021 12:45	Virginia P. Brown	2227924
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/08/2021 12:50	Virginia P. Brown	2227925
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/08/2021 12:51	Virginia P. Brown	2227929
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/08/2021 12:53	Virginia P. Brown	2227932
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/09/2021 11:58	Virginia P. Brown	2227935
EPA 353.2 Rev. 2.0	02/26/2021			03/04/2021 09:25	Beverly Y. Sanders	2227924
	02/26/2021			03/04/2021 09:26	Beverly Y. Sanders	2227925
	02/26/2021			03/04/2021 09:28	Beverly Y. Sanders	2227929
	02/26/2021			03/04/2021 09:29	Beverly Y. Sanders	2227932
	02/26/2021			03/04/2021 09:30	Beverly Y. Sanders	2227935
EPA 365.1 Rev. 2.0	02/26/2021	03/02/2021 12:03	Shengyu Ding	03/03/2021 11:10	Shengyu Ding	2227924
	02/26/2021	03/02/2021 12:03	Shengyu Ding	03/03/2021 11:11	Shengyu Ding	2227925
	02/26/2021	03/02/2021 12:03	Shengyu Ding	03/03/2021 11:12	Shengyu Ding	2227929
	02/26/2021	03/02/2021 12:03	Shengyu Ding	03/03/2021 11:13	Shengyu Ding	2227932
	02/26/2021	03/04/2021 12:20	Shengyu Ding	03/05/2021 11:13	Shengyu Ding	2227935
EPA 365.1 Rev. 2.0 dissolved	02/26/2021			02/26/2021 16:51	Samantha Davila	2227930
	02/26/2021			02/26/2021 16:52	Samantha Davila	2227927
	02/26/2021			02/26/2021 16:53	Samantha Davila	2227926
	02/26/2021			02/26/2021 16:54	Samantha Davila	2227933
	02/26/2021			02/26/2021 17:20	Samantha Davila	2227936
EPA 8321B	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/01/2021 22:41	Rebecca Ware	2227953
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/01/2021 22:54	Rebecca Ware	2227954
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/04/2021 23:22	Rebecca Ware	2227953
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/04/2021 23:33	Rebecca Ware	2227954
	02/26/2021	03/02/2021 09:00	Hoor Shaik	03/03/2021 07:53	Juyoung Kim	2227953
	02/26/2021	03/02/2021 09:00	Hoor Shaik	03/03/2021 08:28	Juyoung Kim	2227954

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	02/26/2021			02/26/2021 18:02	Benjamin T. Nordmann	2227923, 2227928
	02/26/2021			02/26/2021 18:06	Benjamin T. Nordmann	2227931
	02/26/2021			02/26/2021 18:16	Benjamin T. Nordmann	2227922
	02/26/2021			02/26/2021 18:18	Benjamin T. Nordmann	2227934
SM 2320 B-2011	02/26/2021			03/04/2021 05:17	Dale L. Simmons	2227922
	02/26/2021			03/04/2021 06:00	Dale L. Simmons	2227923
	02/26/2021			03/04/2021 06:15	Dale L. Simmons	2227931
	02/26/2021			03/04/2021 07:31	Dale L. Simmons	2227928
SM 2340B	02/26/2021			03/04/2021 07:46	Dale L. Simmons	2227934
SM 2540 C-2011	02/26/2021			03/04/2021 15:14	Betina Topolski	2227955
SM 2540 D-2011	02/26/2021			03/03/2021 13:35	Yijie Li	2227922, 2227923, 2227928, 2227931, 2227934
						2227922, 2227923, 2227928, 2227931, 2227934
SM 4500 F-C-2011	02/26/2021			03/04/2021 05:06	Dale L. Simmons	2227922
	02/26/2021			03/04/2021 06:00	Dale L. Simmons	2227923
	02/26/2021			03/04/2021 06:15	Dale L. Simmons	2227931
	02/26/2021			03/04/2021 07:31	Dale L. Simmons	2227928
	02/26/2021			03/04/2021 07:46	Dale L. Simmons	2227934
SM 5310 B-2011	02/26/2021			03/11/2021 21:48	Madeline Gruver	2227925
	02/26/2021			03/12/2021 00:22	Madeline Gruver	2227924
	02/26/2021			03/12/2021 00:32	Madeline Gruver	2227929
	02/26/2021			03/12/2021 00:43	Madeline Gruver	2227932
	02/26/2021			03/12/2021 01:01	Madeline Gruver	2227935