

Chemical Analysis Report

NE-DIST-2020-10-08-01

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

Event Description: **LSJR Palatka 2020**
Request ID: **RQ-2020-10-05-43**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 30-OCT-2020 11:00

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: FB100720

Collection Date/Time: 10/07/2020 11:00

Field ID: FB100720

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200507	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P388404	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P388632	
		Sulfate	0.20	U	mg SO4/L	P388635	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P388416	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	15	U	mg/L	P389034	
	SM 2540 D-2011	TSS	2	U	mg/L	P388897	
2200508	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P388577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P388497	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P388461	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P388453	
2200509	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P388562	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388412	
2200517	EPA 8321B	2,4-D	0.0020	U	ug/L	P388526	
		Acesulfame K**	0.10	U	ug/L	P388355	
		AMPA**	0.10	U	ug/L	P388355	
		Sucralose**	0.010	U	ug/L	P388355	
		Acetaminophen**	0.0080	U	ug/L	P388526	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Endothall**	0.25	U	ug/L	P388355	
		Glufosinate**	0.10	U	ug/L	P388355	
		Glyphosate**	0.10	U	ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	8.0E-04	U	ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	8.0E-04	U	ug/L	P388526	
		Clothianidin**	0.0020	U	ug/L	P388526	
		Dinotefuran**	0.0020	U	ug/L	P388526	
		Diuron	0.0020	U	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	8.0E-04	U	ug/L	P388526	
		Imazapyr**	0.0040	U	ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.0020	U	ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCPP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	
		Tolfenpyrad**	0.0020	U	ug/L	P388526	

Field ID: FB100720

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200517	EPA 8321B	Triclopyr**	0.0040	U	ug/L	P388526	
2200519	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P388399	
		Calcium	0.075	U	mg/L	P388399	
		Iron	30	U	ug/L	P388399	
		Magnesium	0.040	U	mg/L	P388399	
		Potassium	0.30	U	mg/L	P388399	
		Sodium	0.50	U	mg/L	P388399	
		Zinc	5.0	U	ug/L	P388399	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P388399	
		Antimony	0.050	U	ug/L	P388399	
		Arsenic	0.050	U	ug/L	P388399	
		Beryllium	0.010	U	ug/L	P388399	
		Boron**	2.0	U	ug/L	P388399	
		Cadmium	0.020	U	ug/L	P388399	
		Chromium	0.40	U	ug/L	P388399	
		Copper	0.40	U	ug/L	P388399	
		Lead	0.20	U	ug/L	P388399	
		Nickel	0.50	U	ug/L	P388399	
		Selenium	0.20	U	ug/L	P388399	
		Silver	0.010	U	ug/L	P388399	
		Thallium	0.10	U	ug/L	P388399	
	SM 2340B	Hardness	0.35	U	mg/L	P388399	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Unnamed Ditch 250m Upstream of Deep Cr.

Collection Date/Time: 10/07/2020 10:50

Field ID: G2NE1211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200501	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P388404	
	EPA 300.0 Rev. 2.1	Chloride	300		mg Cl/L	P389331	
		Sulfate	300		mg SO4/L	P389334	
	SM 2120 B-2011	Color (true)	170		PCU	P388416	
	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	1.03E+03		mg/L	P389034	
	SM 2540 D-2011	TSS	4	I	mg/L	P388897	
2200502	SM 4500 F-C-2011	Fluoride	0.64		mg F/L	P388577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P388496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P388460	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.66		mg N/L	P388517	
	EPA 365.1 Rev. 2.0	Total-P	1.0		mg P/L	P388452	
2200503	SM 5310 B-2011	Organic Carbon	26		mg C/L	P388562	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.43		mg P/L	P388412	
2200516	EPA 8321B	2,4-D	0.050		ug/L	P388526	
		Acesulfame K**	0.10	U	ug/L	P388355	
		AMPA**	1.7		ug/L	P388355	
		Sucralose**	0.032	I	ug/L	P388355	
		Acetaminophen**	0.0080	U	ug/L	P388526	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Endothall**	0.25	U	ug/L	P388355	
		Glufosinate**	0.10	U	ug/L	P388355	
		Glyphosate**	1.3		ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	0.0011	I	ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	8.0E-04	U	ug/L	P388526	
		Clothianidin**	0.0063	I	ug/L	P388526	
		Dinotefuran**	0.0020	U	ug/L	P388526	
		Diuron	0.0020	U	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	8.0E-04	U	ug/L	P388526	
		Imazapyr**	0.072		ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.015		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.036		ug/L	P388526	

Field ID: G2NE1211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200516	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Moccassin Branch at Winford Masters Rd

Collection Date/Time: 10/07/2020 11:45

Field ID: 20030557

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200504	EPA 180.1 Rev. 2.0	Turbidity	7.8		NTU	P388404	
	EPA 300.0 Rev. 2.1	Chloride	57		mg Cl/L	P388632	
		Sulfate	50		mg SO4/L	P388635	
		Color (true)	620		PCU	P388416	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	333	AJ	mg/L	P389034	
	SM 2540 D-2011	TSS	5	IA	mg/L	P388897	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P388577	
2200505	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P388496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P388460	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P388517	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P388452	
	SM 5310 B-2011	Organic Carbon	58		mg C/L	P388562	
2200506	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P388412	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 C-2011: For one of the two determinations a constant dry weight was not attained.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Mill Br. @ Old San Mateo Rd.

Collection Date/Time: 10/07/2020 10:05

Field ID: 20030577

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200498	EPA 180.1 Rev. 2.0	Turbidity	13	A	NTU	P388404	
	EPA 300.0 Rev. 2.1	Chloride	94		mg Cl/L	P388632	
		Sulfate	39		mg SO4/L	P388635	
	SM 2120 B-2011	Color (true)	570		PCU	P388416	
	SM 2320 B-2011	Total Alkalinity	48		mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	393		mg/L	P389034	
	SM 2540 D-2011	TSS	6	I	mg/L	P388897	
2200499	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P388577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.089		mg N/L	P388496	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P388460	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P388517	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P388452	
2200500	SM 5310 B-2011	Organic Carbon	48		mg C/L	P388562	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P388412	
2200518	EPA 200.7 Rev. 4.4	Barium	21.8		ug/L	P388399	
		Calcium	38.0		mg/L	P388399	
		Iron	3.38E+03		ug/L	P388399	
		Magnesium	10.4		mg/L	P388399	
		Potassium	4.6		mg/L	P388399	
		Sodium	41.6		mg/L	P388399	
		Zinc	6.9	I	ug/L	P388399	
	EPA 200.8 Rev. 5.4	Aluminum	610		ug/L	P388399	
		Antimony	0.12	I	ug/L	P388399	
		Arsenic	1.41		ug/L	P388399	
		Beryllium	0.068		ug/L	P388399	
		Boron**	56.7		ug/L	P388399	
		Cadmium	0.026	I	ug/L	P388399	
		Chromium	2.1		ug/L	P388399	
		Copper	2.00		ug/L	P388399	
		Lead	0.84		ug/L	P388399	
		Nickel	1.4	I	ug/L	P388399	
		Selenium	0.30	I	ug/L	P388399	
		Silver	0.010	U	ug/L	P388399	
		Thallium	0.10	U	ug/L	P388399	
	SM 2340B	Hardness	138		mg/L	P388399	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388404

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388399

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
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: P388399

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: P388632

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388635

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389331

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389334

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388496

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388497

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388460

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388461

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388452

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388453

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388412

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P388355

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: EPA 8321B
Batch ID: P388526

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
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: SM 2120 B-2011
Batch ID: P388416

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P388574

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P389034

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388897

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388562

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: P388399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	106		P	85 - 115
Calcium	102		P	85 - 115
Iron	109		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	104		P	85 - 115
Beryllium	96.5		P	85 - 115
Boron	98.0		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	103		P	85 - 115
Copper	104		P	85 - 115
Lead	99.7		P	85 - 115
Nickel	104		P	85 - 115
Selenium	103		P	85 - 115
Silver	97.9		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388632

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388635

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389331

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388496

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388497

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388460

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388461

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388452

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388453

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P388355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	125		P	40 - 150
AMPA	78.8		P	40 - 150
Endothall	92.8		P	40 - 150
Glufosinate	85.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P388355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	93.1		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P388526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.5		P	30 - 160
Acetaminophen	78.5		P	30 - 160
Acetamiprid	66.7		P	30 - 160
Afidopyropen	42.2		P	30 - 160
Bentazon	43.0		P	30 - 160
Benzovindiflupyr	59.2		P	30 - 160
Carbamazepine	52.3		P	30 - 160
Clothianidin	71.0		P	30 - 160
Dinotefuran	77.1		P	30 - 160
Diuron	38.8		P	30 - 160
Fenuron	79.9		P	30 - 160
Fluridone	66.4		P	30 - 160
Hydrocodone	67.8		P	30 - 160
Ibuprofen	67.4		P	30 - 160
Imazapyr	74.3		P	30 - 160
Imidacloprid	83.3		P	30 - 160
Linuron	61.6		P	30 - 160
Mandestrobin	68.4		P	30 - 160
MCPP	75.5		P	30 - 160
Naproxen	42.5		P	30 - 160
Primidone	76.3		P	30 - 160
Pyraclostrobin	58.3		P	30 - 160
Thiamethoxam	72.8		P	30 - 160
Tolfenpyrad	44.7		P	30 - 160
Triclopyr	64.0		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P388416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.5		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P388574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	90 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P388562

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200325	Barium	104	107	P/P	80 - 120
2200325	Calcium	103		P	80 - 120
2200325	Iron	114	107	P/P	80 - 120
2200325	Magnesium	113	105	P/P	80 - 120
2200325	Potassium	105	101	P/P	80 - 120
2200325	Sodium	110	105	P/P	80 - 120
2200325	Zinc	99.7	102	P/P	80 - 120
2200340	Barium	105		P	80 - 120
2200340	Calcium	99.2		P	80 - 120
2200340	Iron	108		P	80 - 120
2200340	Magnesium	103		P	80 - 120
2200340	Potassium	99.0		P	80 - 120
2200340	Sodium	103		P	80 - 120
2200340	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200325	Aluminum	100	102	P/P	80 - 120
2200325	Antimony	104	105	P/P	80 - 120
2200325	Arsenic	103	104	P/P	80 - 120
2200325	Beryllium	95.9	98.7	P/P	80 - 120
2200325	Boron	102	105	P/P	80 - 120
2200325	Cadmium	101	103	P/P	80 - 120
2200325	Chromium	101	100	P/P	80 - 120
2200325	Copper	103	103	P/P	80 - 120
2200325	Lead	98.4	99.5	P/P	80 - 120
2200325	Nickel	101	102	P/P	80 - 120
2200325	Selenium	96.2	99.9	P/P	80 - 120
2200325	Silver	97.6	95.7	P/P	80 - 120
2200325	Thallium	101	103	P/P	80 - 120
2200340	Aluminum	103		P	80 - 120
2200340	Antimony	107		P	80 - 120
2200340	Arsenic	105		P	80 - 120
2200340	Beryllium	96.8		P	80 - 120
2200340	Boron	103		P	80 - 120
2200340	Cadmium	103		P	80 - 120
2200340	Chromium	105		P	80 - 120
2200340	Copper	104		P	80 - 120
2200340	Lead	101		P	80 - 120
2200340	Nickel	103		P	80 - 120
2200340	Selenium	99.1		P	80 - 120
2200340	Silver	98.6		P	80 - 120
2200340	Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200313	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200313	Sulfate	103		P	90 - 110
2200498	Sulfate	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201329	Chloride	102		P	90 - 110
2201745	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201329	Sulfate	102		P	90 - 110
2201745	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200332	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200616	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200332	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200647	O-Phosphate-P	98.4	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P388355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199834	Acesulfame K	77.6	73.6	P/P	40 - 150
2199834	AMPA	121	120	P/P	40 - 150
2199834	Endothall	89.0	92.2	P/P	40 - 150
2199834	Glufosinate	80.7	87.4	P/P	40 - 150
2199834	Glyphosate	83.1	82.8	P/P	40 - 140
2199834	Sucralose	90.2	87.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P388526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200724	2,4-D	57.0	61.8	P/P	30 - 160
2200724	Acetaminophen	99.9	99.2	P/P	30 - 160
2200724	Acetamiprid	67.4	71.8	P/P	30 - 160
2200724	Afidopyropen	34.2	35.2	P/P	30 - 160
2200724	Bentazon	32.2	40.2	P/P	30 - 160
2200724	Benzovindiflupyr	52.9	55.8	P/P	30 - 160
2200724	Carbamazepine	48.3	53.1	P/P	30 - 160
2200724	Clothianidin	74.4	74.2	P/P	30 - 160
2200724	Dinotefuran	80.8	82.1	P/P	30 - 160
2200724	Diuron	34.4	37.4	P/P	30 - 160
2200724	Fenuron	64.6	68.7	P/P	30 - 160
2200724	Fluridone	54.1	62.4	P/P	30 - 160
2200724	Hydrocodone	60.3	63.8	P/P	30 - 160
2200724	Ibuprofen	53.5	44.7	P/P	30 - 160
2200724	Imazapyr	78.2	82.8	P/P	30 - 160
2200724	Imidacloprid	97.8	105	P/P	30 - 160
2200724	Linuron	48.9	54.8	P/P	30 - 160
2200724	Mandestrobin	57.4	61.1	P/P	30 - 160
2200724	MCP	55.7	60.0	P/P	30 - 160
2200724	Naproxen	57.3	70.7	P/P	30 - 160
2200724	Primidone	64.7	62.6	P/P	30 - 160
2200724	Pyraclostrobin	49.3	54.2	P/P	30 - 160
2200724	Thiamethoxam	82.7	86.0	P/P	30 - 160
2200724	Tolfenpyrad	38.6	37.6	P/P	30 - 160
2200724	Triclopyr	51.8	51.6	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P388577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200694	Fluoride	98.1	98.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
 Batch ID: P388562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200594	Organic Carbon	99.3	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P388404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200498	Turbidity	1.54	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P388399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200325	Barium	2.35	Spike	P	0 - 20
2200325	Calcium	3.37	Spike	P	0 - 20
2200325	Iron	5.15	Spike	P	0 - 20
2200325	Magnesium	4.62	Spike	P	0 - 20
2200325	Potassium	3.99	Spike	P	0 - 20
2200325	Sodium	2.52	Spike	P	0 - 20
2200325	Zinc	2.39	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P388399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200325	Aluminum	2.14	Spike	P	0 - 20
2200325	Antimony	0.621	Spike	P	0 - 20
2200325	Arsenic	0.989	Spike	P	0 - 20
2200325	Beryllium	2.93	Spike	P	0 - 20
2200325	Boron	2.18	Spike	P	0 - 20
2200325	Cadmium	1.37	Spike	P	0 - 20
2200325	Chromium	0.409	Spike	P	0 - 20
2200325	Copper	0.182	Spike	P	0 - 20
2200325	Lead	1.12	Spike	P	0 - 20
2200325	Nickel	0.217	Spike	P	0 - 20
2200325	Selenium	3.75	Spike	P	0 - 20
2200325	Silver	1.93	Spike	P	0 - 20
2200325	Thallium	1.89	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P388632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200313	Chloride	3.30	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P388635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200313	Sulfate	1.01	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201329	Chloride	0.0720	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201329	Sulfate	0.0163	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200332	Ammonia-N	0.754	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200616	Ammonia-N	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200335	Kjeldahl Nitrogen	7.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200615	Kjeldahl Nitrogen	8.82	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200332	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200315	Total-P	1.71	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200538	Total-P	0.859	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200647	O-Phosphate-P	0.358	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P388355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199834	Acesulfame K	5.35	Spike	P	0 - 30
2199834	AMPA	1.24	Spike	P	0 - 30
2199834	Endothall	3.49	Spike	P	0 - 30
2199834	Glufosinate	7.97	Spike	P	0 - 30
2199834	Glyphosate	0.362	Spike	P	0 - 30
2199834	Sucralose	3.06	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P388526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200724	2,4-D	7.29	Spike	P	0 - 30
2200724	Acetaminophen	0.616	Spike	P	0 - 30
2200724	Acetamiprid	6.25	Spike	P	0 - 30
2200724	Afidopyropen	2.81	Spike	P	0 - 30
2200724	Bentazon	10.4	Spike	P	0 - 30
2200724	Benzovindiflupyr	5.25	Spike	P	0 - 30
2200724	Carbamazepine	9.44	Spike	P	0 - 30
2200724	Clothianidin	0.220	Spike	P	0 - 30
2200724	Dinotefuran	1.54	Spike	P	0 - 30
2200724	Diuron	8.21	Spike	P	0 - 30
2200724	Fenuron	6.21	Spike	P	0 - 30
2200724	Fluridone	11.6	Spike	P	0 - 30
2200724	Hydrocodone	5.69	Spike	P	0 - 30
2200724	Ibuprofen	17.9	Spike	P	0 - 30
2200724	Imazapyr	4.58	Spike	P	0 - 30
2200724	Imidacloprid	7.21	Spike	P	0 - 30
2200724	Linuron	11.3	Spike	P	0 - 30
2200724	Mandestrobin	6.21	Spike	P	0 - 30
2200724	MCPP	7.32	Spike	P	0 - 30
2200724	Naproxen	21.0	Spike	P	0 - 30
2200724	Primidone	3.35	Spike	P	0 - 30
2200724	Pyraclostrobin	9.50	Spike	P	0 - 30
2200724	Thiamethoxam	3.84	Spike	P	0 - 30
2200724	Tolfenpyrad	2.50	Spike	P	0 - 30
2200724	Triclopyr	0.475	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P388574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Total Alkalinity	1.20	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P389034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200504	TDS	7.21	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Fluoride	0.467	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200594	Organic Carbon	1.20	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2200516
Field Sample ID: G2NE1211

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	38.8	P	30 - 160
EPA 8321B	Diuron-d6	33.4	P	30 - 160
EPA 8321B	Endothall-d6	125	P	30 - 160
EPA 8321B	Endothall-d6	125	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.0	P	30 - 160
EPA 8321B	Primidone-d5	46.9	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Lab Sample ID: 2200517
Field Sample ID: FB100720

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.3	P	30 - 160
EPA 8321B	Diuron-d6	67.5	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.5	P	30 - 160
EPA 8321B	Primidone-d5	70.8	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101431

Included Lab Sample IDs: 2200498, 2200501, 2200504, 2200507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101435

Included Lab Sample IDs: 2200500, 2200503, 2200506, 2200509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.9	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A101436

Included Lab Sample IDs: 2200498, 2200501, 2200504, 2200507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 115
Color (true)	98.0	99.5	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A101451

Included Lab Sample IDs: 2200516, 2200517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	125	61.4	P/P	60 - 160
Endothall	108	113	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101460

Included Lab Sample IDs: 2200499, 2200502, 2200505, 2200508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101468

Included Lab Sample IDs: 2200499, 2200502, 2200505

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101471

Included Lab Sample IDs: 2200508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.5	94.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101474

Included Lab Sample IDs: 2200499, 2200502, 2200505, 2200508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	98.3	P/P	90 - 110
Kjeldahl Nitrogen	98.3	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101475

Included Lab Sample IDs: 2200516, 2200517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.3	69.4	P/P	60 - 160
Glufosinate	89.0	76.8	P/P	60 - 160
Glyphosate	99.7	99.4	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101476

Included Lab Sample IDs: 2200518, 2200519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	101	99.4	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	101	99.7	P/P	90 - 110
Arsenic	102	101	P/P	90 - 110
Beryllium	97.6	98.2	P/P	90 - 110
Beryllium	99.0	97.6	P/P	90 - 110
Boron	96.9	100	P/P	90 - 110
Boron	98.5	96.9	P/P	90 - 110
Cadmium	98.2	97.1	P/P	90 - 110
Cadmium	98.5	98.2	P/P	90 - 110
Chromium	97.1	98.2	P/P	90 - 110
Chromium	98.2	97.4	P/P	90 - 110
Copper	101	98.2	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	98.8	97.2	P/P	90 - 110
Lead	99.2	98.8	P/P	90 - 110
Nickel	100	100	P/P	90 - 110
Nickel	100	98.2	P/P	90 - 110
Selenium	97.8	95.3	P/P	90 - 110
Selenium	99.5	97.8	P/P	90 - 110
Silver	102	99.9	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	95.8	94.8	P/P	90 - 110
Thallium	96.5	95.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101477

Included Lab Sample IDs: 2200518, 2200519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Barium	102	101	P/P	95 - 105
Calcium	101	99.9	P/P	90 - 110
Calcium	101	99.6	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101477

Included Lab Sample IDs: 2200518, 2200519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	101	P/P	95 - 105
Iron	102	102	P/P	90 - 110
Magnesium	100	98.8	P/P	95 - 105
Magnesium	99.4	98.5	P/P	90 - 110
Potassium	99.0	98.9	P/P	95 - 105
Potassium	99.6	98.8	P/P	90 - 110
Sodium	101	102	P/P	95 - 105
Sodium	103	102	P/P	90 - 110
Zinc	97.0	98.3	P/P	90 - 110
Zinc	100	98.2	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A101479

Included Lab Sample IDs: 2200516, 2200517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	109	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A101484

Included Lab Sample IDs: 2200499, 2200502, 2200505, 2200508

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

Reference Method: SM 2320 B-2011

Run ID: A101486

Included Lab Sample IDs: 2200498, 2200501, 2200504, 2200507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	105	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101486

Included Lab Sample IDs: 2200498, 2200501, 2200504, 2200507

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101493

Included Lab Sample IDs: 2200498, 2200504, 2200507

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101496

Included Lab Sample IDs: 2200518, 2200519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.2	97.8	P/P	90 - 110
Aluminum	99.0	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101527

Included Lab Sample IDs: 2200499, 2200502, 2200505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	107	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101588

Included Lab Sample IDs: 2200516, 2200517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.5	86.7	P/P	50 - 150
Acetaminophen	101	99.7	P/P	60 - 160
Acetamiprid	104	101	P/P	50 - 150
Afidopyropen	81.0	93.0	P/P	50 - 150
Bentazon	88.4	93.0	P/P	50 - 160
Benzovindiflupyr	92.9	90.0	P/P	50 - 150
Carbamazepine	103	99.3	P/P	60 - 150
Clothianidin	90.5	86.9	P/P	60 - 150
Dinotefuran	89.6	86.3	P/P	50 - 150
Diuron	104	102	P/P	60 - 160
Fenuron	118	115	P/P	60 - 150
Fluridone	111	108	P/P	60 - 160
Hydrocodone	102	98.2	P/P	60 - 150
Ibuprofen	100	97.6	P/P	50 - 160
Imazapyr	80.8	82.7	P/P	50 - 160
Imidacloprid	89.9	86.0	P/P	60 - 150
Linuron	83.8	103	P/P	60 - 150
Mandestrobin	99.6	98.1	P/P	50 - 150
MCPP	83.6	79.1	P/P	50 - 150
Naproxen	112	90.5	P/P	50 - 160
Primidone	90.3	87.1	P/P	60 - 150
Pyraclostrobin	95.1	94.2	P/P	60 - 150
Thiamethoxam	95.1	96.2	P/P	50 - 150
Tolfenpyrad	97.8	95.6	P/P	60 - 150
Triclopyr	70.5	78.1	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101798

Included Lab Sample IDs: 2200501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								1.54	
EPA 200.7 Rev. 4.4	Barium	106			104	107	105			2.35
	Calcium	102			103	99.2				3.37
	Iron	109			114	107	108			5.15
	Magnesium	107			113	105	103			4.62
	Potassium	103			105	101	99.0			3.99
	Sodium	108			110	105	103			2.52
	Zinc	100			99.7	102	101			2.39
EPA 200.8 Rev. 5.4	Aluminum	102			100	102	103			2.14
	Antimony	104			104	105	107			0.621
	Arsenic	104			103	104	105			0.989
	Beryllium	96.5			95.9	98.7	96.8			2.93
	Boron	98.0			102	105	103			2.18
	Cadmium	101			101	103	103			1.37
	Chromium	103			101	100	105			0.409
	Copper	104			103	103	104			0.182
	Lead	99.7			98.4	99.5	101			1.12
	Nickel	104			101	102	103			0.217
	Selenium	103			96.2	99.9	99.1			3.75
	Silver	97.9			97.6	95.7	98.6			1.93
	Thallium	102			103	106	101			1.89
EPA 300.0 Rev. 2.1	Chloride	104			106				3.30	
	Chloride	99.4			102	102			0.0720	
	Sulfate	103			103	97.4			1.01	
	Sulfate	99.9			102	102			0.0163	
EPA 350.1 Rev. 2.0	Ammonia-N	101			99.8	101				0.754
	Ammonia-N	99.7			103	105				1.30
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105								7.63
	Kjeldahl Nitrogen	101								8.82
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100			99.5	99.5				0.0
EPA 365.1 Rev. 2.0	Total-P	109								1.71
	Total-P	110								0.859
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9			98.4	97.9				0.358
EPA 8321B	2,4-D	78.5			57.0	61.8				7.29
	Acesulfame K	125			77.6	73.6				5.35
	Acetaminophen	78.5			99.9	99.2				0.616
	Acetamiprid	66.7			67.4	71.8				6.25
	Afidopyropen	42.2			34.2	35.2				2.81
	AMPA	78.8			121	120				1.24
	Bentazon	43.0			32.2	40.2				10.4
	Benzovindiflupyr	59.2			52.9	55.8				5.25
	Carbamazepine	52.3			48.3	53.1				9.44
	Clothianidin	71.0			74.4	74.2				0.220
	Dinotefuran	77.1			80.8	82.1				1.54
	Diuron	38.8			34.4	37.4				8.21
	Endothall	92.8			89.0	92.2				3.49
	Fenuron	79.9			64.6	68.7				6.21
	Fluridone	66.4			54.1	62.4				11.6
	Glufosinate	85.4			80.7	87.4				7.97
	Glyphosate	93.1			83.1	82.8				0.362
	Hydrocodone	67.8			60.3	63.8				5.69
	Ibuprofen	67.4			53.5	44.7				17.9
	Imazapyr	74.3			78.2	82.8				4.58
	Imidacloprid	83.3			97.8	105				7.21

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	61.6	48.9	54.8		11.3
	Mandestrobin	68.4	57.4	61.1		6.21
	MCP	75.5	55.7	60.0		7.32
	Naproxen	42.5	57.3	70.7		21.0
	Primidone	76.3	64.7	62.6		3.35
	Pyraclostrobin	58.3	49.3	54.2		9.50
	Sucralose	105	90.2	87.2		3.06
	Thiamethoxam	72.8	82.7	86.0		3.84
	Tolfenpyrad	44.7	38.6	37.6		2.50
	Triclopyr	64.0	51.8	51.6		0.475
SM 2120 B-2011	Color (true)	97.5				
SM 2320 B-2011	Total Alkalinity	99.8			1.20	
SM 2540 C-2011	TDS				7.21	
SM 4500 F-C-2011	Fluoride	99.4	98.1	98.8		0.467
SM 5310 B-2011	Organic Carbon	98.8	99.3	101		1.20

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2200498, 2200501, 2200504, 2200507
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2200518, 2200519
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2200518, 2200519
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2200498, 2200501, 2200504, 2200507
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2200498, 2200501, 2200504, 2200507
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2200499, 2200502, 2200505, 2200508
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2200499, 2200502, 2200505, 2200508
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2200499, 2200502, 2200505
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2200499, 2200502, 2200505, 2200508
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2200500, 2200503, 2200506, 2200509
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2200516, 2200517
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2200516, 2200517
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2200498, 2200501, 2200504, 2200507
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2200498, 2200501, 2200504, 2200507
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2200518, 2200519
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2200498, 2200501, 2200504, 2200507
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2200498, 2200501, 2200504, 2200507
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2200498, 2200501, 2200504, 2200507
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2200499, 2200502, 2200505, 2200508

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	10/08/2020			10/08/2020 15:41	Yen Ta	2200498, 2200501, 2200504, 2200507
EPA 200.7 Rev. 4.4	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/12/2020 11:49	Betina Topolski	2200519
	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/12/2020 14:51	Betina Topolski	2200518
EPA 200.8 Rev. 5.4	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/12/2020 13:55	Alexander Thompson	2200519
	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/12/2020 15:41	Alexander Thompson	2200518
	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/13/2020 14:58	Alexander Thompson	2200519
	10/08/2020	10/08/2020 15:20	Elliott D. Healy	10/13/2020 15:49	Alexander Thompson	2200518
EPA 300.0 Rev. 2.1	10/08/2020			10/14/2020 06:18	Elliott Rodriguez	2200498
	10/08/2020			10/14/2020 09:09	Elliott Rodriguez	2200504
	10/08/2020			10/14/2020 09:22	Elliott Rodriguez	2200507
	10/08/2020			10/27/2020 13:44	Lipi Saha	2200501
EPA 350.1 Rev. 2.0	10/08/2020			10/10/2020 12:00	Ping Hua	2200499
	10/08/2020			10/10/2020 12:01	Ping Hua	2200502
	10/08/2020			10/10/2020 12:03	Ping Hua	2200505
	10/08/2020			10/10/2020 12:31	Ping Hua	2200508
EPA 351.2 Rev. 2.0	10/08/2020	10/09/2020 12:50	David Boose	10/12/2020 13:15	Virginia P. Brown	2200499
	10/08/2020	10/09/2020 12:50	David Boose	10/12/2020 13:17	Virginia P. Brown	2200502
	10/08/2020	10/09/2020 12:50	David Boose	10/12/2020 13:18	Virginia P. Brown	2200505
	10/08/2020	10/09/2020 12:50	David Boose	10/12/2020 13:27	Virginia P. Brown	2200508
EPA 353.2 Rev. 2.0	10/08/2020			10/12/2020 09:20	Beverly Y. Sanders	2200499
	10/08/2020			10/12/2020 09:21	Beverly Y. Sanders	2200502
	10/08/2020			10/12/2020 09:22	Beverly Y. Sanders	2200505
EPA 365.1 Rev. 2.0	10/08/2020	10/09/2020 12:35	Yen Ta	10/12/2020 12:12	Shengyu Wang	2200508
	10/08/2020	10/09/2020 12:35	Yen Ta	10/13/2020 14:36	Lipi Saha	2200499
	10/08/2020	10/09/2020 12:35	Yen Ta	10/13/2020 14:37	Lipi Saha	2200502
	10/08/2020	10/09/2020 12:35	Yen Ta	10/13/2020 14:38	Lipi Saha	2200505
EPA 365.1 Rev. 2.0 dissolved	10/08/2020			10/08/2020 15:05	Virginia P. Brown	2200500
	10/08/2020			10/08/2020 15:08	Virginia P. Brown	2200503
	10/08/2020			10/08/2020 15:09	Virginia P. Brown	2200506, 2200509
EPA 8321B	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 18:49	Rebecca Ware	2200516
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 19:03	Rebecca Ware	2200517
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 15:24	Rebecca Ware	2200516
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 15:35	Rebecca Ware	2200517
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 15:03	Rebecca Ware	2200516
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 15:15	Rebecca Ware	2200517
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 03:50	Juyoung Kim	2200516
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 04:25	Juyoung Kim	2200517
SM 2120 B-2011	10/08/2020			10/08/2020 16:48	Benjamin T. Nordmann	2200507
	10/08/2020			10/08/2020 17:11	Benjamin T. Nordmann	2200498
	10/08/2020			10/08/2020 17:12	Benjamin T. Nordmann	2200501

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	10/08/2020			10/08/2020 17:13	Benjamin T. Nordmann	2200504
SM 2320 B-2011	10/08/2020			10/13/2020 07:54	Lauren Lees	2200498
	10/08/2020			10/13/2020 08:39	Lauren Lees	2200504
	10/08/2020			10/13/2020 08:49	Lauren Lees	2200507
	10/08/2020			10/13/2020 09:29	Lauren Lees	2200501
SM 2340B	10/08/2020			10/12/2020 11:49	Betina Topolski	2200519
	10/08/2020			10/12/2020 14:51	Betina Topolski	2200518
SM 2540 C-2011	10/08/2020			10/09/2020 19:52	Madeline Gruver	2200498, 2200501, 2200504, 2200507
SM 2540 D-2011	10/08/2020			10/09/2020 18:07	Madeline Gruver	2200498, 2200501, 2200504, 2200507
SM 4500 F-C-2011	10/08/2020			10/13/2020 07:54	Lauren Lees	2200498
	10/08/2020			10/13/2020 08:39	Lauren Lees	2200504
	10/08/2020			10/13/2020 08:49	Lauren Lees	2200507
	10/08/2020			10/13/2020 09:29	Lauren Lees	2200501
SM 5310 B-2011	10/08/2020			10/12/2020 21:20	Madeline Gruver	2200499
	10/08/2020			10/12/2020 21:32	Madeline Gruver	2200502
	10/08/2020			10/12/2020 21:45	Madeline Gruver	2200505
	10/08/2020			10/12/2020 21:57	Madeline Gruver	2200508