

Chemical Analysis Report

NE-DIST-2020-01-23-01

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

Event Description: **Suwannee Central 2020**
Request ID: **RQ-2020-01-20-13**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-FEB-2020 13:56

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Alligator Creek Above Starke WWTP US 301

Collection Date/Time: 01/22/2020 10:00

Field ID: 21030076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151138	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P377645	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P378043	
		Sulfate	38		mg SO4/L	P378046	
	SM 2120 B-2011	Color (true)	40		PCU	P377637	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P377765	
	SM 2540 C-2011	TDS	120	A	mg/L	P378244	
	SM 2540 D-2011	TSS	5	IA	mg/L	P377862	
2151139	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P377768	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P378179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P377990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P377844	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P377913	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P377835	
2151140	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P377646	

Ref. Method and Comment:

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.

Sample Location: Alligator Creek at 301 bypass West of Starke

Collection Date/Time: 01/22/2020 10:45

Field ID: G1NE0935

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151135	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P377644	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P378042	
		Sulfate	38		mg SO4/L	P378045	
	SM 2120 B-2011	Color (true)	35		PCU	P377637	
	SM 2320 B-2011	Total Alkalinity	36		mg CaCO3/L	P377765	
	SM 2540 C-2011	TDS	155		mg/L	P378244	
	SM 2540 D-2011	TSS	3	I	mg/L	P377862	
	SM 4500 F-C-2011	Fluoride	0.095	I	mg F/L	P377768	
2151136	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P378179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P377990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.83		mg N/L	P378000	
	EPA 365.1 Rev. 2.0	Total-P	0.84		mg P/L	P377913	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P377835	
2151137	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.77		mg P/L	P377646	
2151146	EPA 8321B	2,4-D	0.0020	U	ug/L	P377536	
		Acesulfame K**	0.10	U	ug/L	P377652	
		AMPA**	0.10	U	ug/L	P377652	
		Sucralose**	5.5		ug/L	P377652	MS
		Acetaminophen**	0.0080	U	ug/L	P377536	
		Acetamiprid**	0.019		ug/L	P377536	
		Endothall**	0.25	U	ug/L	P377652	MS
		Glufosinate**	0.10	U	ug/L	P377652	
		Glyphosate**	0.10	U	ug/L	P377652	
		Afidopyrophen**	0.0020	UJ	ug/L	P377536	
		Bentazon	8.0E-04	U	ug/L	P377536	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377536	
		Carbamazepine**	0.015		ug/L	P377536	
		Clothianidin**	0.0020	U	ug/L	P377536	
		Dinotefuran**	0.0045	I	ug/L	P377536	
		Diuron	0.0020	I	ug/L	P377536	
		Fenuron	0.016	U	ug/L	P377536	
		Fluridone**	8.0E-04	U	ug/L	P377536	
		Imazapyr**	0.011	I	ug/L	P377536	
		Hydrocodone**	0.0047	I	ug/L	P377536	
		Ibuprofen**	0.020	U	ug/L	P377536	
		Imidacloprid	0.029		ug/L	P377536	MS
		Linuron	0.0053	I	ug/L	P377536	
		Mandestrobin**	0.0020	UJ	ug/L	P377536	
		MCP	0.0020	U	ug/L	P377536	
		Naproxen**	0.0080	U	ug/L	P377536	RPD
		Primidone**	0.016		ug/L	P377536	
		Pyraclostrobin**	0.0020	U	ug/L	P377536	
		Thiamethoxam**	0.0020	U	ug/L	P377536	

Field ID: G1NE0935

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151146	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377536	
		Triclopyr**	0.0040	U	ug/L	P377536	
2151147	EPA 200.7 Rev. 4.4	Barium	78.1		ug/L	P377724	
		Calcium	25.7		mg/L	P377724	
		Iron	390		ug/L	P377724	
		Magnesium	3.90		mg/L	P377724	
		Potassium	2.6		mg/L	P377724	
		Sodium	16.9		mg/L	P377724	
		Zinc	11	I	ug/L	P377724	
	EPA 200.8 Rev. 5.4	Aluminum	292		ug/L	P377724	
		Antimony	0.092	I	ug/L	P377724	
		Arsenic	0.33		ug/L	P377724	
		Boron**	37.8		ug/L	P377724	
		Cadmium	0.020	U	ug/L	P377724	
		Chromium	0.40	U	ug/L	P377724	
		Copper	0.60	I	ug/L	P377724	
		Lead	0.20	U	ug/L	P377724	
		Nickel	0.60	I	ug/L	P377724	
		Selenium	0.20	U	ug/L	P377724	
		Silver	0.010	U	ug/L	P377724	
		Thallium	0.10	U	ug/L	P377724	
	SM 2340B	Hardness	80.2		mg/L	P377724	

Ref. Method and Comment:

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 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for diuron and 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377644

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377645

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

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: P377724

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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: P378042

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378043

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: P378045

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378046

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378179

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377844

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378000

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377913

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377646

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

Reference Method: EPA 8321B
Batch ID: P377536

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377536

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P377652

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: P377637

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377765

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

Reference Method: SM 2540 C-2011
Batch ID: P378244

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P377862

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377768

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377835

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: P377724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	100		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.8		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	106		P	80 - 120
Arsenic	104		P	80 - 120
Boron	98.5		P	80 - 120
Cadmium	104		P	80 - 120
Chromium	103		P	80 - 120
Copper	105		P	80 - 120
Lead	107		P	80 - 120
Nickel	103		P	80 - 120
Selenium	103		P	80 - 120
Silver	104		P	80 - 120
Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378043

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378046

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377844

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378000

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: P377913

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: P377646

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

Reference Method: EPA 8321B
Batch ID: P377536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	40 - 160
Acetaminophen	78.9		P	30 - 160
Acetamiprid	79.6		P	40 - 160
Afidopyropen	93.6		P	40 - 160
Bentazon	61.3		P	30 - 160
Benzovindiflupyr	81.8		P	40 - 160
Carbamazepine	97.0		P	40 - 160
Clothianidin	86.4		P	40 - 160
Dinotefuran	101		P	40 - 160
Diuron	73.0		P	40 - 160
Fenuron	102		P	40 - 160
Fluridone	95.3		P	40 - 160
Hydrocodone	91.5		P	40 - 160
Ibuprofen	81.9		P	30 - 160
Imazapyr	77.0		P	40 - 160
Imidacloprid	107		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	72.9		P	40 - 160
Mandestrobin	89.0		P	40 - 160
MCP	108		P	40 - 160
Naproxen	82.7		P	40 - 160
Primidone	93.8		P	40 - 160
Pyraclostrobin	82.8		P	30 - 160
Thiamethoxam	100		P	40 - 160
Tolfenpyrad	65.6		P	40 - 160
Triclopyr	90.3		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	131		P	40 - 150
AMPA	104		P	40 - 150
Endothall	82.9		P	40 - 150
Glufosinate	74.4		P	40 - 150
Glyphosate	69.0		P	40 - 140
Sucralose	82.3		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P377637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P377765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P377768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151147	Barium	102	102	P/P	80 - 120
2151147	Calcium	101		P	80 - 120
2151147	Iron	103	103	P/P	80 - 120
2151147	Magnesium	97.8	96.5	P/P	80 - 120
2151147	Potassium	95.2	96.1	P/P	80 - 120
2151147	Sodium	98.4		P	80 - 120
2151147	Zinc	103	103	P/P	80 - 120
2151559	Barium	105		P	80 - 120
2151559	Calcium	105		P	80 - 120
2151559	Iron	106		P	80 - 120
2151559	Magnesium	108		P	80 - 120
2151559	Potassium	111		P	80 - 120
2151559	Sodium	103		P	80 - 120
2151559	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151147	Aluminum	104	102	P/P	80 - 120
2151147	Antimony	108	107	P/P	80 - 120
2151147	Arsenic	106	106	P/P	80 - 120
2151147	Boron	101	100	P/P	80 - 120
2151147	Cadmium	106	106	P/P	80 - 120
2151147	Chromium	107	106	P/P	80 - 120
2151147	Copper	105	105	P/P	80 - 120
2151147	Lead	110	109	P/P	80 - 120
2151147	Nickel	104	103	P/P	80 - 120
2151147	Selenium	102	101	P/P	80 - 120
2151147	Silver	103	101	P/P	80 - 120
2151147	Thallium	105	105	P/P	80 - 120
2151559	Aluminum	100		P	80 - 120
2151559	Antimony	102		P	80 - 120
2151559	Arsenic	104		P	80 - 120
2151559	Boron	100		P	80 - 120
2151559	Cadmium	102		P	80 - 120
2151559	Chromium	103		P	80 - 120
2151559	Copper	106		P	80 - 120
2151559	Lead	108		P	80 - 120
2151559	Nickel	104		P	80 - 120
2151559	Selenium	99.8		P	80 - 120
2151559	Silver	102		P	80 - 120
2151559	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150906	Chloride	98.8		P	90 - 110
2151049	Chloride	99.1		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151149	Chloride	100		P	90 - 110
2151244	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150906	Sulfate	99.5		P	90 - 110
2151049	Sulfate	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151149	Sulfate	99.5		P	90 - 110
2151244	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151171	Ammonia-N	99.3	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151139	NO2NO3-N	97.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151254	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151092	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151042	O-Phosphate-P	95.0	96.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150536	Acetaminophen	85.8	79.2	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150536	Acetamiprid	106	95.8	P/P	40 - 160
2150536	Afidopyropen	105	96.5	P/P	40 - 160
2150536	Bentazon	58.0	51.7	P/P	30 - 160
2150536	Benzovindiflupyr	86.9	80.8	P/P	40 - 160
2150536	Carbamazepine	96.6	87.8	P/P	40 - 160
2150536	Clothianidin	96.1	88.2	P/P	40 - 160
2150536	Dinotefuran	141	132	P/P	40 - 160
2150536	Fenuron	99.0	90.8	P/P	40 - 160
2150536	Fluridone	100	91.2	P/P	40 - 160
2150536	Hydrocodone	98.2	95.2	P/P	40 - 160
2150536	Ibuprofen	90.5	77.5	P/P	30 - 160
2150536	Imazapyr	116	96.9	P/P	40 - 160
2150536	Imidacloprid	161	134	F/P	40 - 160
2150536	Linuron	81.6	71.9	P/P	40 - 160
2150536	Mandestrobin	99.5	89.6	P/P	40 - 160
2150536	MCCP	124	106	P/P	40 - 160
2150536	Naproxen	93.3	64.2	P/P	40 - 160
2150536	Primidone	95.3	93.8	P/P	40 - 160
2150536	Pyraclostrobin	97.1	87.1	P/P	30 - 160
2150536	Thiamethoxam	141	127	P/P	40 - 160
2150536	Tolfenpyrad	73.0	66.5	P/P	40 - 160
2150536	Triclopyr	96.3	78.3	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150765	Acesulfame K	51.1	51.4	P/P	40 - 150
2150765	AMPA	45.3	47.1	P/P	40 - 150
2150765	Endothall	146	185	P/F	40 - 150
2150765	Glufosinate	62.2	59.5	P/P	40 - 150
2150765	Glyphosate	73.4	68.9	P/P	40 - 140
2150765	Sucralose	15.9	16.3	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P377768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151043	Fluoride	98.6	98.6	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151126	Organic Carbon	98.0	92.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151124	Turbidity	1.50	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151195	Turbidity	13.2	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151147	Barium	0.00280	Spike	P	0 - 20
2151147	Calcium	0.113	Spike	P	0 - 20
2151147	Iron	0.403	Spike	P	0 - 20
2151147	Magnesium	0.690	Spike	P	0 - 20
2151147	Potassium	0.554	Spike	P	0 - 20
2151147	Sodium	0.783	Spike	P	0 - 20
2151147	Zinc	0.550	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151147	Aluminum	1.70	Spike	P	0 - 20
2151147	Antimony	1.40	Spike	P	0 - 20
2151147	Arsenic	0.173	Spike	P	0 - 20
2151147	Boron	0.593	Spike	P	0 - 20
2151147	Cadmium	0.0883	Spike	P	0 - 20
2151147	Chromium	0.716	Spike	P	0 - 20
2151147	Copper	0.225	Spike	P	0 - 20
2151147	Lead	1.07	Spike	P	0 - 20
2151147	Nickel	0.490	Spike	P	0 - 20
2151147	Selenium	0.830	Spike	P	0 - 20
2151147	Silver	1.40	Spike	P	0 - 20
2151147	Thallium	0.451	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151049	Chloride	1.05	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151149	Chloride	0.722	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151049	Sulfate	1.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151149	Sulfate	0.936	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151171	Ammonia-N	2.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151125	Kjeldahl Nitrogen	6.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151139	NO2NO3-N	1.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151254	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151092	Total-P	1.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151042	O-Phosphate-P	0.932	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150536	2,4-D	15.2	Spike	P	0 - 30
2150536	Acetaminophen	8.09	Spike	P	0 - 30
2150536	Acetamiprid	9.81	Spike	P	0 - 30
2150536	Afidopyropen	8.86	Spike	P	0 - 30
2150536	Bentazon	11.5	Spike	P	0 - 30
2150536	Benzovindiflupyr	7.35	Spike	P	0 - 30
2150536	Carbamazepine	9.62	Spike	P	0 - 30
2150536	Clothianidin	8.56	Spike	P	0 - 30
2150536	Dinotefuran	6.60	Spike	P	0 - 30
2150536	Diuron	3.45	Spike	P	0 - 30
2150536	Fenuron	8.66	Spike	P	0 - 30
2150536	Fluridone	9.70	Spike	P	0 - 30
2150536	Hydrocodone	3.13	Spike	P	0 - 30
2150536	Ibuprofen	15.5	Spike	P	0 - 30
2150536	Imazapyr	18.0	Spike	P	0 - 30
2150536	Imidacloprid	18.2	Spike	P	0 - 30
2150536	Linuron	12.6	Spike	P	0 - 30
2150536	Mandestrobin	10.5	Spike	P	0 - 30
2150536	MCPP	16.4	Spike	P	0 - 30
2150536	Naproxen	36.9	Spike	F	0 - 30
2150536	Primidone	1.55	Spike	P	0 - 30
2150536	Pyraclostrobin	10.8	Spike	P	0 - 30
2150536	Thiamethoxam	10.1	Spike	P	0 - 30
2150536	Tolfenpyrad	9.33	Spike	P	0 - 30
2150536	Triclopyr	20.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150765	Acesulfame K	0.560	Spike	P	0 - 30
2150765	AMPA	3.95	Spike	P	0 - 30
2150765	Endothall	23.3	Spike	P	0 - 30
2150765	Glufosinate	4.41	Spike	P	0 - 30
2150765	Glyphosate	6.35	Spike	P	0 - 30
2150765	Sucralose	2.24	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P377637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151170	Color (true)	0.989	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P377765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151043	Total Alkalinity	0.451	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P378244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151138	TDS	0.830	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151043	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151126	Organic Carbon	3.01	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2151146
Field Sample ID: G1NE0935

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.3	P	30 - 160
EPA 8321B	Diuron-d6	70.9	P	30 - 160
EPA 8321B	Diuron-d6	70.9	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.2	P	30 - 160
EPA 8321B	Primidone-d5	92.0	P	30 - 160
EPA 8321B	Primidone-d5	92.0	P	30 - 160
EPA 8321B	Sucralose-d6	84.7	P	30 - 160
EPA 8321B	Sucralose-d6	84.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97076

Included Lab Sample IDs: 2151137, 2151140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	97.1	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97077

Included Lab Sample IDs: 2151135, 2151138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97078

Included Lab Sample IDs: 2151135, 2151138

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

Reference Method: EPA 8321B

Run ID: A97116

Included Lab Sample IDs: 2151146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.6	85.3	P/P	60 - 160
Endothall	107	105	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97121

Included Lab Sample IDs: 2151146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.5	113	P/P	50 - 150
Acetaminophen	102	94.5	P/P	60 - 160
Acetamiprid	105	108	P/P	50 - 150
Afidopyropen	103	106	P/P	50 - 150
Bentazon	91.6	94.5	P/P	50 - 160
Benzovindiflupyr	105	103	P/P	50 - 150
Carbamazepine	111	112	P/P	60 - 150
Clothianidin	104	103	P/P	60 - 150
Dinotefuran	98.7	106	P/P	50 - 150
Diuron	107	103	P/P	60 - 150
Fenuron	107	109	P/P	60 - 150
Fluridone	109	113	P/P	60 - 160
Hydrocodone	112	101	P/P	60 - 150
Ibuprofen	101	94.5	P/P	50 - 160
Imazapyr	100	109	P/P	50 - 150
Imidacloprid	112	104	P/P	60 - 150
Linuron	114	99.6	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	101	97.4	P/P	50 - 150
Naproxen	111	120	P/P	50 - 160
Primidone	108	109	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97121

Included Lab Sample IDs: 2151146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	108	105	P/P	60 - 150
Thiamethoxam	105	96.1	P/P	50 - 150
Tolfenpyrad	107	111	P/P	60 - 150
Triclopyr	102	108	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A97134

Included Lab Sample IDs: 2151135, 2151138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97134

Included Lab Sample IDs: 2151135, 2151138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97137

Included Lab Sample IDs: 2151146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	119	121	P/P	60 - 160
Glufosinate	80.2	65.1	P/P	60 - 160
Glyphosate	68.9	73.5	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97138

Included Lab Sample IDs: 2151139

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

Reference Method: SM 5310 B-2011

Run ID: A97159

Included Lab Sample IDs: 2151136, 2151139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	98.8	P/P	90 - 110
Organic Carbon	97.8	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2151135, 2151138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Chloride	99.8	100	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2151135, 2151138

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97177

Included Lab Sample IDs: 2151147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	105	103	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	107	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97211

Included Lab Sample IDs: 2151136

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97234

Included Lab Sample IDs: 2151136, 2151139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97248

Included Lab Sample IDs: 2151136

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97256

Included Lab Sample IDs: 2151139

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	108	108	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97264

Included Lab Sample IDs: 2151147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.0	98.8	P/P	90 - 110
Antimony	101	100	P/P	90 - 110
Arsenic	99.7	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97264

Included Lab Sample IDs: 2151147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	105	P/P	90 - 110
Cadmium	98.2	97.9	P/P	90 - 110
Chromium	94.2	96.4	P/P	90 - 110
Copper	97.6	97.8	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	97.3	98.8	P/P	90 - 110
Selenium	99.2	99.3	P/P	90 - 110
Silver	98.1	99.0	P/P	90 - 110
Thallium	99.2	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97273

Included Lab Sample IDs: 2151146

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.3	83.2	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97280

Included Lab Sample IDs: 2151136, 2151139

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

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.50	
	Turbidity						13.2	
EPA 200.7 Rev. 4.4	Barium	102	102	102	105			0.0028
	Calcium	100	101	105				0.113
	Iron	103	103	103	106			0.403
	Magnesium	104	97.8	96.5	108			0.690
	Potassium	101	95.2	96.1	111			0.554
	Sodium	99.8	98.4	103				0.783
	Zinc	102	103	103	103			0.550
EPA 200.8 Rev. 5.4	Aluminum	102	104	102	100			1.70
	Antimony	106	108	107	102			1.40
	Arsenic	104	106	106	104			0.173
	Boron	98.5	101	100	100			0.593
	Cadmium	104	106	106	102			0.0883
	Chromium	103	107	106	103			0.716
	Copper	105	105	105	106			0.225
	Lead	107	110	109	108			1.07
	Nickel	103	104	103	104			0.490
	Selenium	103	99.8	102	101			0.830
	Silver	104	103	101	102			1.40
	Thallium	102	105	105	103			0.451
EPA 300.0 Rev. 2.1	Chloride	100	99.1	98.8			1.05	
	Chloride	101	100	101			0.722	
	Sulfate	98.5	96.5	99.5			1.18	
	Sulfate	102	99.5	99.1			0.936	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7	99.3	102				2.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107						6.45
EPA 353.2 Rev. 2.0	NO2NO3-N	102	97.5	99.0				1.42
	NO2NO3-N	100	102	102				0.0
EPA 365.1 Rev. 2.0	Total-P	104	104	106				1.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	95.0	96.1				0.932
EPA 8321B	2,4-D	122						15.2
	Acesulfame K	131	51.1	51.4				0.560
	Acetaminophen	78.9	85.8	79.2				8.09
	Acetamiprid	79.6	106	95.8				9.81
	Afidopyropen	93.6	105	96.5				8.86
	AMPA	104	47.1	45.3				3.95
	Bentazon	61.3	58.0	51.7				11.5
	Benzovindiflupyr	81.8	86.9	80.8				7.35
	Carbamazepine	97.0	96.6	87.8				9.62
	Clothianidin	86.4	96.1	88.2				8.56
	Dinotefuran	101	141	132				6.60
	Diuron	73.0						3.45
	Endothall	82.9	146	185				23.3
	Fenuron	102	99.0	90.8				8.66
	Fluridone	95.3	100	91.2				9.70
	Glufosinate	74.4	62.2	59.5				4.41
	Glyphosate	69.0	73.4	68.9				6.35
	Hydrocodone	91.5	98.2	95.2				3.13
	Ibuprofen	81.9	90.5	77.5				15.5
	Imazapyr	77.0	116	96.9				18.0
	Imidacloprid	107	161	134				18.2
	Linuron	72.9	81.6	71.9				12.6
	Mandestrobin	89.0	99.5	89.6				10.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	MCPP	108	124	106			16.4
	Naproxen	82.7	93.3	64.2			36.9
	Primidone	93.8	95.3	93.8			1.55
	Pyraclostrobin	82.8	97.1	87.1			10.8
	Sucralose	82.3	16.3	15.9			2.24
	Thiamethoxam	100	141	127			10.1
	Tolfenpyrad	65.6	73.0	66.5			9.33
	Triclopyr	90.3	96.3	78.3			20.6
SM 2120 B-2011	Color (true)	101				0.989	
SM 2320 B-2011	Total Alkalinity	102				0.451	
SM 2540 C-2011	TDS					0.830	
SM 4500 F-C-2011	Fluoride	97.0	98.6	98.6			0.0
SM 5310 B-2011	Organic Carbon	92.8	98.0	92.9			3.01

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2151135, 2151138
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2151147
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2151147
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2151135, 2151138
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2151135, 2151138
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2151136, 2151139
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2151136, 2151139
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2151136, 2151139
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2151136, 2151139
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2151137, 2151140
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2151146
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2151146
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2151135, 2151138
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2151135, 2151138
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2151147
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2151135, 2151138
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2151135, 2151138
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2151135, 2151138
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2151136, 2151139

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	01/23/2020			01/23/2020 16:14	Samantha Davila	2151135, 2151138
EPA 200.7 Rev. 4.4	01/23/2020	01/27/2020 14:00	Elliott D. Healy	01/29/2020 15:16	Betina Topolski	2151147
EPA 200.8 Rev. 5.4	01/23/2020	01/27/2020 14:00	Elliott D. Healy	02/01/2020 01:10	Alexander Thompson	2151147
EPA 300.0 Rev. 2.1	01/23/2020			01/30/2020 01:55	Lipi Saha	2151135
	01/23/2020			01/30/2020 04:08	Lipi Saha	2151138
EPA 350.1 Rev. 2.0	01/23/2020			02/03/2020 12:55	Ping Hua	2151136
	01/23/2020			02/03/2020 13:02	Ping Hua	2151139
EPA 351.2 Rev. 2.0	01/23/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 10:11	Jhamieka S. Greenwood	2151136
	01/23/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 10:12	Jhamieka S. Greenwood	2151139
EPA 353.2 Rev. 2.0	01/23/2020			01/28/2020 11:44	Beverly Y. Sanders	2151139
	01/23/2020			01/30/2020 10:03	Beverly Y. Sanders	2151136
EPA 365.1 Rev. 2.0	01/23/2020	01/29/2020 15:35	Yen Ta	01/30/2020 14:00	Benjamin T. Nordmann	2151136
	01/23/2020	01/29/2020 15:35	Yen Ta	01/31/2020 13:29	Benjamin T. Nordmann	2151139
EPA 365.1 Rev. 2.0 dissolved	01/23/2020			01/23/2020 16:34	Carlos Miranda	2151137
	01/23/2020			01/23/2020 16:35	Carlos Miranda	2151140
EPA 8321B	01/23/2020	01/23/2020 11:30	Hoor Shaik	01/25/2020 11:17	Juyoung Kim	2151146
	01/23/2020	01/24/2020 10:30	Rebecca Ware	01/24/2020 17:37	Rebecca Ware	2151146
	01/23/2020	01/24/2020 10:30	Rebecca Ware	01/27/2020 13:40	Rebecca Ware	2151146
	01/23/2020	01/24/2020 10:30	Rebecca Ware	01/29/2020 21:07	Rebecca Ware	2151146
SM 2120 B-2011	01/23/2020			01/23/2020 16:16	Madeline Funaro	2151135
	01/23/2020			01/23/2020 16:17	Madeline Funaro	2151138
SM 2320 B-2011	01/23/2020			01/28/2020 01:11	Dale L. Simmons	2151135
	01/23/2020			01/28/2020 01:25	Dale L. Simmons	2151138
SM 2340B	01/23/2020			01/29/2020 15:16	Betina Topolski	2151147
SM 2540 C-2011	01/23/2020			01/27/2020 16:10	Sima Feizi	2151135, 2151138
SM 2540 D-2011	01/23/2020			01/27/2020 16:10	Sima Feizi	2151135, 2151138
SM 4500 F-C-2011	01/23/2020			01/28/2020 01:11	Dale L. Simmons	2151135
	01/23/2020			01/28/2020 01:25	Dale L. Simmons	2151138
SM 5310 B-2011	01/23/2020			01/28/2020 02:13	Madeline Funaro	2151139
	01/23/2020			01/28/2020 07:16	Madeline Funaro	2151136