

Chemical Analysis Report

SW-DIST-2020-01-28-01

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

Event Description: **SMP RUN 6**
Request ID: **RQ-2020-01-20-24**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 21-FEB-2020 10:03



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: Indian Creek @ Fruitville Rd

Collection Date/Time: 01/27/2020 10:30

Field ID: G3SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151960	EPA 180.1 Rev. 2.0	Turbidity	7.5	A	NTU	P377807	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P378153	
	SM 2120 B-2011	Color (true)	31		PCU	P377813	
	SM 2320 B-2011	Total Alkalinity	43		mg CaCO3/L	P378053	
	SM 2540 C-2011	TDS	205	A	mg/L	P378370	
	SM 2540 D-2011	TSS	2	IA	mg/L	P378134	
	SM 4500 F-C-2011	Fluoride	0.58		mg F/L	P378058	
2151961	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P378394	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P378199	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P378002	
	EPA 365.1 Rev. 2.0	Total-P	0.89		mg P/L	P378072	
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P377957	
2151962	EPA 300.0 Rev. 2.1 dissolved	Sulfate	78		mg SO4/L	P378158	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.60		mg P/L	P377811	
2151975	EPA 200.7 Rev. 4.4	Barium	2.3	I	ug/L	P377975	
		Calcium	33.2		mg/L	P377975	
		Iron	1.61E+03		ug/L	P377975	
		Magnesium	12.5		mg/L	P377975	
		Potassium	3.4		mg/L	P377975	
		Sodium	10.9		mg/L	P377975	
		Zinc	6.8	I	ug/L	P377975	
	EPA 200.8 Rev. 5.4	Aluminum	136		ug/L	P377975	
		Antimony	0.050	U	ug/L	P377975	
		Arsenic	0.99		ug/L	P377975	
		Boron**	35.2		ug/L	P377975	
		Cadmium	0.020	U	ug/L	P377975	
		Chromium	1.2	I	ug/L	P377975	
		Copper	0.40	U	ug/L	P377975	
		Lead	0.20	U	ug/L	P377975	
		Nickel	0.50	U	ug/L	P377975	
		Selenium	0.20	U	ug/L	P377975	
		Silver	0.010	U	ug/L	P377975	
		Thallium	0.10	U	ug/L	P377975	
	SM 2340B	Hardness	134		mg/L	P377975	

Ref. Method and Comment:

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

Sample Location: Owen Creek

Collection Date/Time: 01/27/2020 11:35

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151966	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P377807	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P378153	
	SM 2120 B-2011	Color (true)	35		PCU	P377813	
	SM 2320 B-2011	Total Alkalinity	36	A	mg CaCO3/L	P378053	
	SM 2540 C-2011	TDS	274		mg/L	P378370	
	SM 2540 D-2011	TSS	2	I	mg/L	P378134	
	SM 4500 F-C-2011	Fluoride	0.23		mg F/L	P378058	
2151967	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P378394	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P378199	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P378002	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P378072	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P377957	
2151968	EPA 300.0 Rev. 2.1 dissolved	Sulfate	130		mg SO4/L	P378377	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P377811	
2151974	EPA 8321B	2,4-D	0.0020	U	ug/L	P377753	
		Acesulfame K**	0.10	U	ug/L	P377680	
		AMPA**	0.18	I	ug/L	P377680	
		Sucralose**	0.010	U	ug/L	P377680	
		Acetaminophen**	0.0080	U	ug/L	P377753	
		Acetamiprid**	0.0020	U	ug/L	P377753	
		Endothall**	0.25	U	ug/L	P377680	
		Glufosinate**	0.10	U	ug/L	P377680	
		Glyphosate**	0.23	I	ug/L	P377680	
		Afidopyropen**	0.0020	UJ	ug/L	P377753	
		Bentazon	0.0047		ug/L	P377753	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377753	
		Carbamazepine**	8.0E-04	U	ug/L	P377753	
		Clothianidin**	0.0020	U	ug/L	P377753	
		Dinotefuran**	0.076		ug/L	P377753	
		Diuron	0.0020	U	ug/L	P377753	
		Fenuron	0.016	U	ug/L	P377753	
		Fluridone**	8.0E-04	U	ug/L	P377753	
		Imazapyr**	0.0040	U	ug/L	P377753	
		Hydrocodone**	0.0020	U	ug/L	P377753	
		Ibuprofen**	0.020	U	ug/L	P377753	
		Imidacloprid	0.015		ug/L	P377753	
		Linuron	0.0040	U	ug/L	P377753	
		Mandestrobin**	0.0020	UJ	ug/L	P377753	
		MCP	0.0020	U	ug/L	P377753	
		Naproxen**	0.0080	U	ug/L	P377753	
		Primidone**	0.0040	U	ug/L	P377753	
		Pyraclostrobin**	0.0020	U	ug/L	P377753	
		Thiamethoxam**	0.0020	U	ug/L	P377753	

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151974	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377753	
		Triclopyr**	0.0040	U	ug/L	P377753	

Ref. Method and Comment:

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

EPA 300.0 Rev. 2.1 dissolved: Sulfate: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference 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.

Sample Location: Mobley Ditch @ 70

Collection Date/Time: 01/27/2020 11:15

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151963	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P377807	
	EPA 300.0 Rev. 2.1	Chloride	150		mg Cl/L	P378153	
	SM 2120 B-2011	Color (true)	170		PCU	P377813	
	SM 2320 B-2011	Total Alkalinity	99		mg CaCO3/L	P378053	
	SM 2540 C-2011	TDS	477		mg/L	P378370	
	SM 2540 D-2011	TSS	6	I	mg/L	P378134	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P378058	
2151964	EPA 350.1 Rev. 2.0	Ammonia-N	0.082		mg N/L	P378394	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P378199	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P378002	
	EPA 365.1 Rev. 2.0	Total-P	2.2		mg P/L	P378072	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P377957	
2151965	EPA 300.0 Rev. 2.1 dissolved	Sulfate	19		mg SO4/L	P378158	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	2.0		mg P/L	P377811	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377807

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377975

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: P377975

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: P378153

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378158

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378377

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378394

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378199

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

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

Reference Method: EPA 8321B
Batch ID: P377680

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: P377753

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377753

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

Reference Method: SM 2120 B-2011
Batch ID: P377813

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378053

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

Reference Method: SM 2540 C-2011
Batch ID: P378370

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P378134

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377957

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: P377975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	108		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	102		P	85 - 115
Sodium	106		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	107		P	85 - 115
Boron	89.4		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	108		P	85 - 115
Copper	106		P	85 - 115
Lead	106		P	85 - 115
Nickel	111		P	85 - 115
Selenium	104		P	85 - 115
Silver	97.1		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378158

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378377

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378394

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378199

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

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

Reference Method: EPA 8321B
Batch ID: P377680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	85.5		P	40 - 150
Endothall	118		P	40 - 150
Glufosinate	89.6		P	40 - 150
Glyphosate	80.1		P	40 - 140
Sucralose	80.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P377753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	124		P	30 - 160
Acetaminophen	102		P	30 - 160
Acetamiprid	91.4		P	30 - 160
Afidopyropen	88.8		P	30 - 160
Bentazon	71.2		P	30 - 160
Benzovindiflupyr	83.8		P	30 - 160
Carbamazepine	100		P	30 - 160
Clothianidin	89.4		P	30 - 160
Dinotefuran	92.5		P	30 - 160
Diuron	77.9		P	30 - 160
Fenuron	100		P	30 - 160
Fluridone	98.3		P	30 - 160
Hydrocodone	96.1		P	30 - 160
Ibuprofen	93.3		P	30 - 160
Imazapyr	89.6		P	30 - 160
Imidacloprid	97.1		P	30 - 160
Linuron	73.6		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P377753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	92.2		P	30 - 160
MCP	125		P	30 - 160
Naproxen	87.4		P	30 - 160
Primidone	92.7		P	30 - 160
Pyraclostrobin	84.5		P	30 - 160
Thiamethoxam	97.8		P	30 - 160
Tolfenpyrad	59.8		P	30 - 160
Triclopyr	81.4		P	30 - 160

Reference Method: SM 2120 B-2011

Batch ID: P377813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P378053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P378058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-2011

Batch ID: P377957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152490	Barium	105	104	P/P	80 - 120
2152490	Calcium	110	109	P/P	80 - 120
2152490	Iron	109	109	P/P	80 - 120
2152490	Magnesium	110	109	P/P	80 - 120
2152490	Potassium	104	106	P/P	80 - 120
2152490	Sodium	106	107	P/P	80 - 120
2152490	Zinc	103	102	P/P	80 - 120
2152578	Barium	102		P	80 - 120
2152578	Calcium	108		P	80 - 120
2152578	Iron	106		P	80 - 120
2152578	Magnesium	106		P	80 - 120
2152578	Potassium	100		P	80 - 120
2152578	Sodium	106		P	80 - 120
2152578	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152490	Aluminum	105	105	P/P	80 - 120
2152490	Antimony	106	106	P/P	80 - 120
2152490	Arsenic	109	108	P/P	80 - 120
2152490	Boron	92.2	91.8	P/P	80 - 120
2152490	Cadmium	107	107	P/P	80 - 120
2152490	Chromium	109	109	P/P	80 - 120
2152490	Copper	108	109	P/P	80 - 120
2152490	Lead	108	107	P/P	80 - 120
2152490	Nickel	109	109	P/P	80 - 120
2152490	Selenium	104	105	P/P	80 - 120
2152490	Silver	96.3	96.8	P/P	80 - 120
2152490	Thallium	108	108	P/P	80 - 120
2152578	Aluminum	102		P	80 - 120
2152578	Antimony	107		P	80 - 120
2152578	Arsenic	109		P	80 - 120
2152578	Boron	91.5		P	80 - 120
2152578	Cadmium	107		P	80 - 120
2152578	Chromium	107		P	80 - 120
2152578	Copper	107		P	80 - 120
2152578	Lead	107		P	80 - 120
2152578	Nickel	110		P	80 - 120
2152578	Selenium	103		P	80 - 120
2152578	Silver	94.6		P	80 - 120
2152578	Thallium	110		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151851	Chloride	103		P	90 - 110
2151966	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152229	Sulfate	104		P	90 - 110
2152291	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153710	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151865	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151865	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151945	NO2NO3-N	100	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151947	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151987	O-Phosphate-P	95.1	96.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151558	Acesulfame K	41.2	41.2	P/P	40 - 150
2151558	AMPA	95.4	96.6	P/P	40 - 150
2151558	Endothall	125	130	P/P	40 - 150
2151558	Glufosinate	86.4	97.1	P/P	40 - 150
2151558	Glyphosate	68.0	72.5	P/P	40 - 140
2151558	Sucralose	82.5	82.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151974	2,4-D	109	112	P/P	30 - 160
2151974	Acetaminophen	85.7	84.2	P/P	30 - 160
2151974	Acetamiprid	97.4	84.9	P/P	30 - 160
2151974	Afidopyropen	93.6	95.7	P/P	30 - 160
2151974	Bentazon	38.5	39.4	P/P	30 - 160
2151974	Benzovindiflupyr	79.2	81.3	P/P	30 - 160
2151974	Carbamazepine	77.8	80.2	P/P	30 - 160
2151974	Clothianidin	94.7	103	P/P	30 - 160
2151974	Dinotefuran	114	117	P/P	30 - 160
2151974	Diuron	65.5	65.3	P/P	30 - 160
2151974	Fenuron	83.4	81.8	P/P	30 - 160
2151974	Fluridone	89.3	98.5	P/P	30 - 160
2151974	Hydrocodone	87.8	106	P/P	30 - 160
2151974	Ibuprofen	72.3	74.6	P/P	30 - 160
2151974	Imazapyr	81.4	77.6	P/P	30 - 160
2151974	Imidacloprid	142	150	P/P	30 - 160
2151974	Linuron	65.6	64.2	P/P	30 - 160
2151974	Mandestrobin	84.7	85.5	P/P	30 - 160
2151974	MCP	109	109	P/P	30 - 160
2151974	Naproxen	69.7	62.3	P/P	30 - 160
2151974	Primidone	87.5	89.9	P/P	30 - 160
2151974	Pyraclostrobin	79.9	82.9	P/P	30 - 160
2151974	Thiamethoxam	142	136	P/P	30 - 160
2151974	Tolfenpyrad	46.7	45.7	P/P	30 - 160
2151974	Triclopyr	80.7	88.9	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151966	Fluoride	100	99.5	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151986	Organic Carbon	97.8	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151960	Turbidity	3.48	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152490	Barium	1.18	Spike	P	0 - 20
2152490	Calcium	0.362	Spike	P	0 - 20
2152490	Iron	0.0121	Spike	P	0 - 20
2152490	Magnesium	0.235	Spike	P	0 - 20
2152490	Potassium	1.51	Spike	P	0 - 20
2152490	Sodium	0.545	Spike	P	0 - 20
2152490	Zinc	1.35	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152490	Aluminum	0.00406	Spike	P	0 - 20
2152490	Antimony	0.201	Spike	P	0 - 20
2152490	Arsenic	0.199	Spike	P	0 - 20
2152490	Boron	0.320	Spike	P	0 - 20
2152490	Cadmium	0.367	Spike	P	0 - 20
2152490	Chromium	0.200	Spike	P	0 - 20
2152490	Copper	0.127	Spike	P	0 - 20
2152490	Lead	0.900	Spike	P	0 - 20
2152490	Nickel	0.262	Spike	P	0 - 20
2152490	Selenium	1.10	Spike	P	0 - 20
2152490	Silver	0.571	Spike	P	0 - 20
2152490	Thallium	0.432	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151851	Chloride	1.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P378158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152229	Sulfate	0.0829	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151865	Ammonia-N	1.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151865	Kjeldahl Nitrogen	0.110	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151945	NO2NO3-N	0.847	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151947	Total-P	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151987	O-Phosphate-P	0.548	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151558	Acesulfame K	0.0146	Spike	P	0 - 30
2151558	AMPA	1.24	Spike	P	0 - 30
2151558	Endothall	3.89	Spike	P	0 - 30
2151558	Glufosinate	11.7	Spike	P	0 - 30
2151558	Glyphosate	6.44	Spike	P	0 - 30
2151558	Sucralose	0.220	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151974	2,4-D	2.48	Spike	P	0 - 30
2151974	Acetaminophen	1.84	Spike	P	0 - 30
2151974	Acetamiprid	13.8	Spike	P	0 - 30
2151974	Afidopyropen	2.26	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151974	Bentazon	0.914	Spike	P	0 - 30
2151974	Benzovindiflupyr	2.55	Spike	P	0 - 30
2151974	Carbamazepine	3.04	Spike	P	0 - 30
2151974	Clothianidin	8.11	Spike	P	0 - 30
2151974	Dinotefuran	1.72	Spike	P	0 - 30
2151974	Diuron	0.285	Spike	P	0 - 30
2151974	Fenuron	1.97	Spike	P	0 - 30
2151974	Fluridone	9.79	Spike	P	0 - 30
2151974	Hydrocodone	18.9	Spike	P	0 - 30
2151974	Ibuprofen	3.20	Spike	P	0 - 30
2151974	Imazapyr	4.80	Spike	P	0 - 30
2151974	Imidacloprid	4.58	Spike	P	0 - 30
2151974	Linuron	2.16	Spike	P	0 - 30
2151974	Mandestrobin	1.05	Spike	P	0 - 30
2151974	MCPP	0.159	Spike	P	0 - 30
2151974	Naproxen	11.1	Spike	P	0 - 30
2151974	Primidone	2.76	Spike	P	0 - 30
2151974	Pyraclostrobin	3.72	Spike	P	0 - 30
2151974	Thiamethoxam	4.42	Spike	P	0 - 30
2151974	Tolfenpyrad	2.17	Spike	P	0 - 30
2151974	Triclopyr	9.64	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P377813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151942	Color (true)	0.756	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P378053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151966	Total Alkalinity	0.438	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P378370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151960	TDS	0.976	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151966	Fluoride	0.477	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P377957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151986	Organic Carbon	1.00	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2151974
Field Sample ID: G3SW0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.6	P	30 - 160
EPA 8321B	Diuron-d6	77.0	P	30 - 160
EPA 8321B	Endothall-d6	127	P	30 - 160
EPA 8321B	Endothall-d6	127	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.3	P	30 - 160
EPA 8321B	Primidone-d5	89.8	P	30 - 160
EPA 8321B	Sucralose-d6	84.9	P	30 - 160
EPA 8321B	Sucralose-d6	84.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97146

Included Lab Sample IDs: 2151960, 2151963, 2151966

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: A97147

Included Lab Sample IDs: 2151962, 2151965, 2151968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.1	P/P	90 - 110
O-Phosphate-P	98.1	98.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97148

Included Lab Sample IDs: 2151960, 2151963, 2151966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2151960, 2151963, 2151966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	99.7	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A97170

Included Lab Sample IDs: 2151962, 2151965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	99.2	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97198

Included Lab Sample IDs: 2151961, 2151964, 2151967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97203

Included Lab Sample IDs: 2151974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	64.7	66.1	P/P	60 - 160
Endothall	132	136	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97204

Included Lab Sample IDs: 2151974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	79.5	83.2	P/P	60 - 160
Glufosinate	89.5	75.7	P/P	60 - 160
Glyphosate	86.8	78.0	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97211

Included Lab Sample IDs: 2151961, 2151964, 2151967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97228

Included Lab Sample IDs: 2151960, 2151963, 2151966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97228

Included Lab Sample IDs: 2151960, 2151963, 2151966

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

Reference Method: EPA 8321B

Run ID: A97267

Included Lab Sample IDs: 2151974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.8	97.6	P/P	50 - 150
Acetaminophen	100	98.4	P/P	60 - 160
Acetamiprid	105	100	P/P	50 - 150
Afidopyropen	95.9	107	P/P	50 - 150
Bentazon	84.3	99.2	P/P	50 - 160
Benzovindiflupyr	107	107	P/P	50 - 150
Carbamazepine	104	100	P/P	60 - 150
Clothianidin	115	113	P/P	60 - 150
Dinotefuran	91.7	97.0	P/P	50 - 150
Diuron	106	108	P/P	60 - 150
Fenuron	103	104	P/P	60 - 150
Fluridone	104	102	P/P	60 - 160
Hydrocodone	104	111	P/P	60 - 150
Ibuprofen	96.2	105	P/P	50 - 160
Imazapyr	114	107	P/P	50 - 150
Imidacloprid	95.0	97.8	P/P	60 - 150
Linuron	101	95.6	P/P	60 - 150
Mandestrobin	108	107	P/P	50 - 150
MCPP	91.5	89.8	P/P	50 - 150
Naproxen	115	100	P/P	50 - 160
Primidone	108	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97267
Included Lab Sample IDs: 2151974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	109	105	P/P	60 - 150
Thiamethoxam	114	108	P/P	50 - 150
Tolfenpyrad	103	107	P/P	60 - 150
Triclopyr	104	92.7	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A97273
Included Lab Sample IDs: 2151974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.8	88.6	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A97278
Included Lab Sample IDs: 2151975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	99.8	P/P	95 - 105
Calcium	101	104	P/P	95 - 105
Iron	102	104	P/P	95 - 105
Magnesium	102	104	P/P	95 - 105
Potassium	100	101	P/P	95 - 105
Sodium	101	103	P/P	95 - 105
Zinc	98.2	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97292
Included Lab Sample IDs: 2151961, 2151967

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97295
Included Lab Sample IDs: 2151964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Run ID: A97327
Included Lab Sample IDs: 2151968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	99.2	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97331

Included Lab Sample IDs: 2151961, 2151964, 2151967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97349

Included Lab Sample IDs: 2151961, 2151964, 2151967

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97402

Included Lab Sample IDs: 2151975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.0	97.7	P/P	90 - 110
Antimony	99.6	102	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Cadmium	99.8	102	P/P	90 - 110
Chromium	98.6	99.3	P/P	90 - 110
Copper	98.2	96.6	P/P	90 - 110
Lead	98.3	98.8	P/P	90 - 110
Selenium	99.6	100	P/P	90 - 110
Thallium	98.6	98.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97426

Included Lab Sample IDs: 2151975

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97586

Included Lab Sample IDs: 2151975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	96.2	96.5	P/P	90 - 110
Silver	97.6	98.9	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.48	
EPA 200.7 Rev. 4.4	Barium	102	105	104	102			1.18
	Calcium	108	110	109	108			0.362
	Iron	105	109	109	106			0.0121
	Magnesium	107	110	109	106			0.235
	Potassium	102	104	106	100			1.51
	Sodium	106	106	107	106			0.545
	Zinc	101	103	102	101			1.35
EPA 200.8 Rev. 5.4	Aluminum	102	102	105	105			0.0040
	Antimony	106	106	106	107			0.201
	Arsenic	107	109	108	109			0.199
	Boron	89.4	92.2	91.8	91.5			0.320
	Cadmium	107	107	107	107			0.367
	Chromium	108	109	109	107			0.200
	Copper	106	108	109	107			0.127
	Lead	106	108	107	107			0.900
	Nickel	111	109	109	110			0.262
	Selenium	104	104	105	103			1.10
	Silver	97.1	96.3	96.8	94.6			0.571
	Thallium	106	108	108	110			0.432
EPA 300.0 Rev. 2.1	Chloride	102	103	102			1.49	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	103	104	103			0.0829	
	Sulfate	99.5	98.7					
EPA 350.1 Rev. 2.0	Ammonia-N	102	100	102				1.57
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	106	106				0.110
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	100	99.2				0.847
EPA 365.1 Rev. 2.0	Total-P	101	103	105				1.40
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	95.1	96.0				0.548
EPA 8321B	2,4-D	124	109	112				2.48
	Acesulfame K	126	41.2	41.2				0.0146
	Acetaminophen	102	84.2	85.7				1.84
	Acetamiprid	91.4	84.9	97.4				13.8
	Afidopyropen	88.8	95.7	93.6				2.26
	AMPA	85.5	95.4	96.6				1.24
	Bentazon	71.2	39.4	38.5				0.914
	Benzovindiflupyr	83.8	81.3	79.2				2.55
	Carbamazepine	100	80.2	77.8				3.04
	Clothianidin	89.4	103	94.7				8.11
	Dinotefuran	92.5	117	114				1.72
	Diuron	77.9	65.3	65.5				0.285
	Endothall	118	125	130				3.89
	Fenuron	100	81.8	83.4				1.97
	Fluridone	98.3	98.5	89.3				9.79
	Glufosinate	89.6	86.4	97.1				11.7
	Glyphosate	80.1	68.0	72.5				6.44
	Hydrocodone	96.1	106	87.8				18.9
	Ibuprofen	93.3	72.3	74.6				3.20
	Imazapyr	89.6	77.6	81.4				4.80
	Imidacloprid	97.1	150	142				4.58
	Linuron	73.6	64.2	65.6				2.16
	Mandestrobin	92.2	85.5	84.7				1.05
	MCPP	125	109	109				0.159
	Naproxen	87.4	69.7	62.3				11.1
	Primidone	92.7	89.9	87.5				2.76

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	84.5	82.9	79.9		3.72
	Sucralose	80.9	82.5	82.3		0.220
	Thiamethoxam	97.8	136	142		4.42
	Tolfenpyrad	59.8	45.7	46.7		2.17
	Triclopyr	81.4	80.7	88.9		9.64
SM 2120 B-2011	Color (true)	99.2			0.756	
SM 2320 B-2011	Total Alkalinity	104			0.438	
SM 2540 C-2011	TDS				0.976	
SM 4500 F-C-2011	Fluoride	97.7	100	99.5		0.477
SM 5310 B-2011	Organic Carbon	98.6	99.2	97.8		1.00

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2151960, 2151963, 2151966
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2151975
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2151975
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2151960, 2151963, 2151966
EPA 300.0 Rev. 2.1 dissolved	Sulfate, dissolved, in filtered, aqueous matrices	2151962, 2151965, 2151968
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2151961, 2151964, 2151967
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2151961, 2151964, 2151967
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2151961, 2151964, 2151967
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2151961, 2151964, 2151967
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2151962, 2151965, 2151968
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2151974
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2151974
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2151960, 2151963, 2151966
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2151960, 2151963, 2151966
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2151975
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2151960, 2151963, 2151966
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2151960, 2151963, 2151966
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2151960, 2151963, 2151966
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2151961, 2151964, 2151967

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	01/28/2020			01/28/2020 15:30	Yen Ta	2151960, 2151963, 2151966
EPA 200.7 Rev. 4.4	01/28/2020	01/30/2020 15:25	Elliott D. Healy	02/03/2020 13:48	Betina Topolski	2151975
EPA 200.8 Rev. 5.4	01/28/2020	01/30/2020 15:25	Elliott D. Healy	02/07/2020 15:12	Justin Cutchin	2151975
	01/28/2020	01/30/2020 15:25	Elliott D. Healy	02/10/2020 16:48	Justin Cutchin	2151975
	01/28/2020	01/30/2020 15:25	Elliott D. Healy	02/17/2020 17:48	Justin Cutchin	2151975
EPA 300.0 Rev. 2.1	01/28/2020			01/31/2020 05:13	Lipi Saha	2151966
	01/28/2020			01/31/2020 07:38	Lipi Saha	2151960
	01/28/2020			01/31/2020 07:51	Lipi Saha	2151963
EPA 300.0 Rev. 2.1 dissolved	01/28/2020			01/31/2020 14:18	Lipi Saha	2151962
	01/28/2020			01/31/2020 14:30	Lipi Saha	2151965
	01/28/2020			02/05/2020 16:46	Elliott Rodriguez	2151968
EPA 350.1 Rev. 2.0	01/28/2020			02/04/2020 13:34	Ping Hua	2151961
	01/28/2020			02/04/2020 13:55	Ping Hua	2151964
	01/28/2020			02/04/2020 13:56	Ping Hua	2151967
EPA 351.2 Rev. 2.0	01/28/2020	02/04/2020 12:30	Jhamieka S. Greenwood	02/05/2020 11:40	Jhamieka S. Greenwood	2151961
	01/28/2020	02/04/2020 12:30	Jhamieka S. Greenwood	02/05/2020 11:42	Jhamieka S. Greenwood	2151964
	01/28/2020	02/04/2020 12:30	Jhamieka S. Greenwood	02/05/2020 11:43	Jhamieka S. Greenwood	2151967
EPA 353.2 Rev. 2.0	01/28/2020			01/30/2020 10:51	Beverly Y. Sanders	2151961
	01/28/2020			01/30/2020 10:52	Beverly Y. Sanders	2151964
	01/28/2020			01/30/2020 10:53	Beverly Y. Sanders	2151967
EPA 365.1 Rev. 2.0	01/28/2020	01/31/2020 14:34	Yen Ta	02/03/2020 15:34	Benjamin T. Nordmann	2151961
	01/28/2020	01/31/2020 14:34	Yen Ta	02/03/2020 15:39	Benjamin T. Nordmann	2151967
	01/28/2020	01/31/2020 14:34	Yen Ta	02/04/2020 13:07	Benjamin T. Nordmann	2151964
EPA 365.1 Rev. 2.0 dissolved	01/28/2020			01/28/2020 17:06	Carlos Miranda	2151968
	01/28/2020			01/28/2020 17:23	Carlos Miranda	2151962
	01/28/2020			01/28/2020 17:26	Carlos Miranda	2151965
EPA 8321B	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/28/2020 13:39	Rebecca Ware	2151974
	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/28/2020 19:49	Rebecca Ware	2151974
	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/30/2020 04:10	Rebecca Ware	2151974
	01/28/2020	01/29/2020 10:00	Hoor Shaik	01/31/2020 22:00	Juyoung Kim	2151974
SM 2120 B-2011	01/28/2020			01/28/2020 16:25	Madeline Funaro	2151960
	01/28/2020			01/28/2020 16:27	Madeline Funaro	2151966
	01/28/2020			01/28/2020 16:37	Madeline Funaro	2151963
SM 2320 B-2011	01/28/2020			01/30/2020 13:08	Dale L. Simmons	2151966
	01/28/2020			01/30/2020 13:28	Dale L. Simmons	2151960
	01/28/2020			01/30/2020 13:42	Dale L. Simmons	2151963
SM 2340B	01/28/2020			02/03/2020 13:48	Betina Topolski	2151975
SM 2540 C-2011	01/28/2020			01/30/2020 14:40	Sima Feizi	2151960, 2151963, 2151966
SM 2540 D-2011	01/28/2020			01/30/2020 14:40	Sima Feizi	2151960, 2151963, 2151966
SM 4500 F-C-2011	01/28/2020			01/30/2020 12:59	Dale L. Simmons	2151966

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	01/28/2020			01/30/2020 13:28	Dale L. Simmons	2151960
	01/28/2020			01/30/2020 13:42	Dale L. Simmons	2151963
SM 5310 B-2011	01/28/2020			01/30/2020 03:39	Madeline Funaro	2151961
	01/28/2020			01/30/2020 03:52	Madeline Funaro	2151964
	01/28/2020			01/30/2020 04:05	Madeline Funaro	2151967