

Chemical Analysis Report

NW-DIST-2020-03-03-04

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

Event Description: **Shoal River**
Request ID: **RQ-2020-02-03-72**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 24-MAR-2020 12:30

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: Yellow River downstream of Gin Hole Landing Collection Date/Time: 03/02/2020 13:20

Field ID: G4NW0494

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161729	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P380008	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P380342	
		Sulfate	1.9		mg SO4/L	P380344	
		Color (true)	54		PCU	P380003	
	SM 2320 B-2011	Total Alkalinity	10		mg CaCO3/L	P380270	
	SM 2540 C-2011	TDS	24	I	mg/L	P380542	
	SM 2540 D-2011	TSS	6	I	mg/L	P380423	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380274	
2161730	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P380072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P380114	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P380237	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P380305	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P380276	
2161731	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379982	
2161756	EPA 200.7 Rev. 4.4	Barium	15.5		ug/L	P380202	
		Calcium	4.48		mg/L	P380202	
		Iron	690		ug/L	P380202	
		Magnesium	1.19		mg/L	P380202	
		Potassium	0.56	I	mg/L	P380202	
		Sodium	2.1		mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	228		ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.35		ug/L	P380202	
		Boron**	8.2		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.46	I	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.31	I	ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	

Sample Location: Shoal River near Rattlesnake Bluff

Collection Date/Time: 03/02/2020 13:35

Field ID: G4NW0493

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161726	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P380008	
	EPA 300.0 Rev. 2.1	Chloride	3.3		mg Cl/L	P380342	
		Sulfate	1.7		mg SO4/L	P380344	
	SM 2120 B-2011	Color (true)	55	A	PCU	P380003	
	SM 2320 B-2011	Total Alkalinity	2.7		mg CaCO3/L	P380270	
	SM 2540 C-2011	TDS	28		mg/L	P380542	
	SM 2540 D-2011	TSS	3	I	mg/L	P380423	
2161727	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380274	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P380072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P380117	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P380237	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P380305	
2161728	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P380276	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379982	
2161751	EPA 8321B	2,4-D	0.0020	U	ug/L	P380128	
		Acesulfame K**	0.10	U	ug/L	P379958	MS
		AMPA**	0.10	U	ug/L	P379958	
		Sucralose**	0.16		ug/L	P379958	
		Acetaminophen**	0.0080	U	ug/L	P380128	
		Acetamidiprid**	0.0020	U	ug/L	P380128	
		Endothall**	0.25	U	ug/L	P379958	MS
		Glufosinate**	0.10	U	ug/L	P379958	
		Glyphosate**	0.10	U	ug/L	P379958	MS
		Afidopyropen**	0.0020	UJ	ug/L	P380128	
		Bentazon	8.0E-04	U	ug/L	P380128	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380128	
		Carbamazepine**	8.0E-04	U	ug/L	P380128	
		Clothianidin**	0.0020	U	ug/L	P380128	
		Dinotefuran**	0.0020	U	ug/L	P380128	
		Diuron	0.0020	U	ug/L	P380128	
		Fenuron	0.016	U	ug/L	P380128	
		Fluridone**	8.0E-04	U	ug/L	P380128	
		Imazapyr**	0.013	I	ug/L	P380128	
		Hydrocodone**	0.0020	U	ug/L	P380128	
		Ibuprofen**	0.020	U	ug/L	P380128	
		Imidacloprid	0.0035	I	ug/L	P380128	
		Linuron	0.0040	U	ug/L	P380128	
		Mandestrobin**	0.0020	UJ	ug/L	P380128	
		MCP	0.0020	U	ug/L	P380128	
		Naproxen**	0.0080	U	ug/L	P380128	RPD
		Primidone**	0.0040	U	ug/L	P380128	
		Pyraclostrobin**	0.0020	U	ug/L	P380128	
		Thiamethoxam**	0.0020	U	ug/L	P380128	

Field ID: G4NW0493

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161751	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P380128	
		Triclopyr**	0.0040	U	ug/L	P380128	
2161755	EPA 200.7 Rev. 4.4	Barium	14.2		ug/L	P380202	
		Calcium	1.81		mg/L	P380202	
		Iron	360		ug/L	P380202	
		Magnesium	0.85		mg/L	P380202	
		Potassium	0.46	I	mg/L	P380202	
		Sodium	2.0	I	mg/L	P380202	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P380202	
		Aluminum	217		ug/L	P380202	
		Antimony	0.050	U	ug/L	P380202	
		Arsenic	0.24		ug/L	P380202	
		Boron**	8.0		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.40	U	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.21	I	ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr 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: P380008

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

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: P380202

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: P380342

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380344

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380117

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380237

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380305

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379982

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

Reference Method: EPA 8321B
Batch ID: P379958

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: P380128

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: P380128

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
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: P380003

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380270

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

Reference Method: SM 2540 C-2011
Batch ID: P380542

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380423

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380276

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: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.2		P	85 - 115
Calcium	102		P	85 - 115
Iron	100		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	98.7		P	85 - 115
Sodium	99.6		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.4		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	98.6		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	98.1		P	85 - 115
Lead	95.8		P	85 - 115
Nickel	96.3		P	85 - 115
Selenium	94.0		P	85 - 115
Silver	94.1		P	85 - 115
Thallium	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380342

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380117

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380237

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380305

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379982

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

Reference Method: EPA 8321B
Batch ID: P379958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.0		P	40 - 150
AMPA	97.8		P	40 - 150
Endothall	133		P	40 - 150
Glufosinate	123		P	40 - 150
Glyphosate	114		P	40 - 140
Sucralose	101		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
Acetaminophen	109		P	30 - 160
Acetamiprid	91.6		P	30 - 160
Afidopyropen	81.1		P	30 - 160
Bentazon	89.6		P	30 - 160
Benzovindiflupyr	80.6		P	30 - 160
Carbamazepine	93.1		P	30 - 160
Clothianidin	93.9		P	30 - 160
Dinotefuran	114		P	30 - 160
Diuron	74.0		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	76.1		P	30 - 160
Hydrocodone	88.9		P	30 - 160
Ibuprofen	82.1		P	30 - 160
Imazapyr	93.5		P	30 - 160
Imidacloprid	99.2		P	30 - 160
Linuron	71.5		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	84.5		P	30 - 160
MCP	120		P	30 - 160
Naproxen	102		P	30 - 160
Primidone	92.7		P	30 - 160
Pyraclostrobin	81.0		P	30 - 160
Thiamethoxam	95.3		P	30 - 160
Tolfenpyrad	40.0		P	30 - 160
Triclopyr	102		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P380003

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

Reference Method: SM 2320 B-2011
Batch ID: P380270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Barium	103		P	80 - 120
2161902	Calcium	100		P	80 - 120
2161902	Iron	102		P	80 - 120
2161902	Magnesium	103		P	80 - 120
2161902	Potassium	105		P	80 - 120
2161902	Sodium	99.1		P	80 - 120
2161902	Zinc	104		P	80 - 120
2161957	Barium	102	102	P/P	80 - 120
2161957	Calcium	100	99.7	P/P	80 - 120
2161957	Iron	102	102	P/P	80 - 120
2161957	Magnesium	102	103	P/P	80 - 120
2161957	Potassium	101	101	P/P	80 - 120
2161957	Sodium	99.2	98.4	P/P	80 - 120
2161957	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Aluminum	95.0		P	80 - 120
2161902	Antimony	100		P	80 - 120
2161902	Arsenic	97.9		P	80 - 120
2161902	Boron	102		P	80 - 120
2161902	Cadmium	102		P	80 - 120
2161902	Chromium	97.9		P	80 - 120
2161902	Copper	93.0		P	80 - 120
2161902	Lead	96.3		P	80 - 120
2161902	Nickel	99.3		P	80 - 120
2161902	Selenium	86.9		P	80 - 120
2161902	Silver	92.2		P	80 - 120
2161902	Thallium	102		P	80 - 120
2161957	Aluminum	93.9	95.2	P/P	80 - 120
2161957	Antimony	103	103	P/P	80 - 120
2161957	Arsenic	96.6	96.3	P/P	80 - 120
2161957	Boron	102	101	P/P	80 - 120
2161957	Cadmium	103	101	P/P	80 - 120
2161957	Chromium	97.8	98.4	P/P	80 - 120
2161957	Copper	95.6	95.9	P/P	80 - 120
2161957	Lead	96.8	96.1	P/P	80 - 120
2161957	Nickel	96.2	95.1	P/P	80 - 120
2161957	Selenium	93.2	92.7	P/P	80 - 120
2161957	Silver	93.3	94.1	P/P	80 - 120
2161957	Thallium	101	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161390	Chloride	96.5		P	90 - 110
2161732	Chloride	95.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161390	Sulfate	98.0		P	90 - 110
2161732	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161714	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161772	Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161625	Kjeldahl Nitrogen	96.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161716	NO2NO3-N	95.2	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161615	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161292	O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P379958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161262	Acesulfame K	19.8	19.6	F/F	40 - 150
2161262	AMPA	70.8	70.8	P/P	40 - 150
2161262	Endothall	134	153	P/F	40 - 150
2161262	Glufosinate	109	124	P/P	40 - 150
2161262	Glyphosate	160	148	F/F	40 - 140
2161262	Sucralose	88.9	94.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161361	2,4-D	83.4	106	P/P	30 - 160
2161361	Acetaminophen	126	117	P/P	30 - 160
2161361	Acetamiprid	83.3	86.3	P/P	30 - 160
2161361	Afidopyropen	87.2	88.0	P/P	30 - 160
2161361	Bentazon	42.6	42.9	P/P	30 - 160
2161361	Benzovindiflupyr	86.6	80.7	P/P	30 - 160
2161361	Carbamazepine	73.9	74.2	P/P	30 - 160
2161361	Clothianidin	91.9	92.4	P/P	30 - 160
2161361	Dinotefuran	143	134	P/P	30 - 160
2161361	Diuron	65.1	61.0	P/P	30 - 160
2161361	Fenuron	77.1	74.8	P/P	30 - 160
2161361	Fluridone	79.9	65.1	P/P	30 - 160
2161361	Hydrocodone	88.4	85.6	P/P	30 - 160
2161361	Ibuprofen	78.2	67.9	P/P	30 - 160
2161361	Imidacloprid	157	145	P/P	30 - 160
2161361	Linuron	66.0	61.7	P/P	30 - 160
2161361	Mandestrobin	86.2	81.0	P/P	30 - 160
2161361	MCCP	125	104	P/P	30 - 160
2161361	Naproxen	105	68.3	P/P	30 - 160
2161361	Primidone	96.6	89.8	P/P	30 - 160
2161361	Pyraclostrobin	99.5	83.6	P/P	30 - 160
2161361	Thiamethoxam	138	136	P/P	30 - 160
2161361	Tolfenpyrad	47.2	46.0	P/P	30 - 160
2161361	Triclopyr	105	99.7	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161886	Fluoride	103	105	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161796	Organic Carbon	97.9	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161711	Turbidity	0.697	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Barium	0.0477	Spike	P	0 - 20
2161957	Calcium	0.189	Spike	P	0 - 20
2161957	Iron	0.0367	Spike	P	0 - 20
2161957	Magnesium	0.464	Spike	P	0 - 20
2161957	Potassium	0.406	Spike	P	0 - 20
2161957	Sodium	0.618	Spike	P	0 - 20
2161957	Zinc	0.276	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Aluminum	1.12	Spike	P	0 - 20
2161957	Antimony	0.301	Spike	P	0 - 20
2161957	Arsenic	0.311	Spike	P	0 - 20
2161957	Boron	1.74	Spike	P	0 - 20
2161957	Cadmium	1.39	Spike	P	0 - 20
2161957	Chromium	0.663	Spike	P	0 - 20
2161957	Copper	0.357	Spike	P	0 - 20
2161957	Lead	0.709	Spike	P	0 - 20
2161957	Nickel	1.20	Spike	P	0 - 20
2161957	Selenium	0.531	Spike	P	0 - 20
2161957	Silver	0.904	Spike	P	0 - 20
2161957	Thallium	0.455	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161732	Chloride	0.0634	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161732	Sulfate	0.322	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161714	Ammonia-N	0.264	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161772	Kjeldahl Nitrogen	0.611	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161625	Kjeldahl Nitrogen	4.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161716	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161615	Total-P	0.972	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161292	O-Phosphate-P	1.60	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P379958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161262	Acesulfame K	0.830	Spike	P	0 - 30
2161262	AMPA	0.00906	Spike	P	0 - 30
2161262	Endothall	13.4	Spike	P	0 - 30
2161262	Glufosinate	12.8	Spike	P	0 - 30
2161262	Glyphosate	1.65	Spike	P	0 - 30
2161262	Sucralose	3.75	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161361	2,4-D	22.3	Spike	P	0 - 30
2161361	Acetaminophen	7.86	Spike	P	0 - 30
2161361	Acetamiprid	3.60	Spike	P	0 - 30
2161361	Afidopyropen	0.972	Spike	P	0 - 30
2161361	Bentazon	0.354	Spike	P	0 - 30
2161361	Benzovindiflupyr	7.01	Spike	P	0 - 30
2161361	Carbamazepine	0.359	Spike	P	0 - 30
2161361	Clothianidin	0.562	Spike	P	0 - 30
2161361	Dinotefuran	6.70	Spike	P	0 - 30
2161361	Diuron	6.47	Spike	P	0 - 30
2161361	Fenuron	3.00	Spike	P	0 - 30
2161361	Fluridone	19.0	Spike	P	0 - 30
2161361	Hydrocodone	3.30	Spike	P	0 - 30
2161361	Ibuprofen	14.2	Spike	P	0 - 30
2161361	Imazapyr	2.13	Spike	P	0 - 30
2161361	Imidacloprid	7.96	Spike	P	0 - 30
2161361	Linuron	6.70	Spike	P	0 - 30
2161361	Mandestrobin	6.29	Spike	P	0 - 30
2161361	MCPP	18.9	Spike	P	0 - 30
2161361	Naproxen	42.3	Spike	F	0 - 30
2161361	Primidone	7.29	Spike	P	0 - 30
2161361	Pyraclostrobin	17.3	Spike	P	0 - 30
2161361	Thiamethoxam	1.24	Spike	P	0 - 30
2161361	Tolfenpyrad	2.52	Spike	P	0 - 30
2161361	Triclopyr	5.53	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P380003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161726	Color (true)	1.76	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161886	Total Alkalinity	0.852	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P380542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161394	TDS	2.83	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P380423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161394	TSS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161886	Fluoride	1.42	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P380276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161796	Organic Carbon	0.989	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2161751
Field Sample ID: G4NW0493

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.6	P	30 - 160
EPA 8321B	Diuron-d6	51.1	P	30 - 160
EPA 8321B	Endothall-d6	152	P	30 - 160
EPA 8321B	Endothall-d6	152	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.2	P	30 - 160
EPA 8321B	Primidone-d5	99.4	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97966

Included Lab Sample IDs: 2161728, 2161731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.5	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97971

Included Lab Sample IDs: 2161726, 2161729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97975

Included Lab Sample IDs: 2161726, 2161729

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97999

Included Lab Sample IDs: 2161727, 2161730

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98035

Included Lab Sample IDs: 2161727, 2161730

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

Reference Method: EPA 8321B

Run ID: A98041

Included Lab Sample IDs: 2161751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	64.3	99.5	P/P	40 - 200
Glufosinate	74.6	124	P/P	40 - 200
Glyphosate	77.0	124	P/P	40 - 200

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98046

Included Lab Sample IDs: 2161727

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98048

Included Lab Sample IDs: 2161755, 2161756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98048

Included Lab Sample IDs: 2161755, 2161756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	102	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Zinc	101	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98055

Included Lab Sample IDs: 2161730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A98057

Included Lab Sample IDs: 2161727, 2161730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98059

Included Lab Sample IDs: 2161726, 2161729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	98.8	P/P	90 - 110
Total Alkalinity	98.8	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98059

Included Lab Sample IDs: 2161726, 2161729

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

Reference Method: EPA 8321B

Run ID: A98069

Included Lab Sample IDs: 2161751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	95.7	P/P	60 - 160
Endothall	125	152	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98081

Included Lab Sample IDs: 2161755, 2161756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98081

Included Lab Sample IDs: 2161755, 2161756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.3	95.4	P/P	90 - 110
Arsenic	99.9	100	P/P	90 - 110
Boron	99.3	102	P/P	90 - 110
Chromium	97.2	98.2	P/P	90 - 110
Copper	97.5	93.6	P/P	90 - 110
Lead	97.0	98.2	P/P	90 - 110
Nickel	98.9	100	P/P	90 - 110
Selenium	96.4	97.1	P/P	90 - 110
Silver	92.2	90.6	P/P	90 - 110
Thallium	94.7	96.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2161726, 2161729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.7	98.8	P/P	90 - 110
Sulfate	97.5	98.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98139

Included Lab Sample IDs: 2161755, 2161756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	97.7	P/P	90 - 110
Antimony	97.7	98.8	P/P	90 - 110
Cadmium	98.3	98.0	P/P	90 - 110
Cadmium	99.6	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98185

Included Lab Sample IDs: 2161727, 2161730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98193

Included Lab Sample IDs: 2161751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2161751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	73.5	81.4	P/P	50 - 150
Acetaminophen	128	122	P/P	60 - 160
Acetamiprid	90.0	91.2	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2161751

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Afidopyropen	82.5	66.0	P/P	50 - 150
Bentazon	114	107	P/P	50 - 160
Benzovindiflupyr	96.6	93.9	P/P	50 - 150
Carbamazepine	91.9	93.0	P/P	60 - 150
Clothianidin	108	88.8	P/P	60 - 150
Dinotefuran	106	118	P/P	50 - 150
Diuron	74.9	76.9	P/P	60 - 150
Fenuron	96.5	87.8	P/P	60 - 150
Fluridone	88.5	78.8	P/P	60 - 160
Hydrocodone	100	88.1	P/P	60 - 150
Ibuprofen	74.8	81.7	P/P	50 - 160
Imazapyr	93.2	98.5	P/P	50 - 150
Imidacloprid	88.2	84.2	P/P	60 - 150
Linuron	79.7	85.9	P/P	60 - 150
Mandestrobin	86.0	86.3	P/P	50 - 150
MCPP	65.8	69.4	P/P	50 - 150
Naproxen	87.5	106	P/P	50 - 160
Primidone	93.4	92.7	P/P	60 - 150
Pyraclostrobin	99.2	92.5	P/P	60 - 150
Thiamethoxam	95.3	95.3	P/P	50 - 150
Tolfenpyrad	73.9	75.4	P/P	60 - 150
Triclopyr	66.8	76.1	P/P	50 - 150

* 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						0.697	
EPA 200.7 Rev. 4.4	Barium	99.2	103	102	102			0.0477
	Calcium	102	100	100	99.7			0.189
	Iron	100	102	102	102			0.0367
	Magnesium	102	103	102	103			0.464
	Potassium	98.7	105	101	101			0.406
	Sodium	99.6	99.1	99.2	98.4			0.618
	Zinc	99.8	104	101	101			0.276
EPA 200.8 Rev. 5.4	Aluminum	94.4	93.9	95.2	95.0			1.12
	Antimony	103	103	103	100			0.301
	Arsenic	98.6	96.6	96.3	97.9			0.311
	Boron	99.4	102	101	102			1.74
	Cadmium	101	103	101	102			1.39
	Chromium	98.8	97.8	98.4	97.9			0.663
	Copper	98.1	95.6	95.9	93.0			0.357
	Lead	95.8	96.8	96.1	96.3			0.709
	Nickel	96.3	96.2	95.1	99.3			1.20
	Selenium	94.0	93.2	92.7	86.9			0.531
	Silver	94.1	93.3	94.1	92.2			0.904
	Thallium	99.1	101	100	102			0.455
EPA 300.0 Rev. 2.1	Chloride	98.2	95.9	96.5			0.0634	
	Sulfate	98.3	98.4	98.0			0.322	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	101	101				0.264
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	106	107				0.611
	Kjeldahl Nitrogen	103	96.3	101				4.16
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	95.2	96.2				0.995
EPA 365.1 Rev. 2.0	Total-P	107	106	107				0.972
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1	98.9	100				1.60
EPA 8321B	2,4-D	127	83.4	106				22.3
	Acesulfame K	96.0	19.8	19.6				0.830
	Acetaminophen	109	126	117				7.86
	Acetamiprid	91.6	83.3	86.3				3.60
	Afidopyropen	81.1	87.2	88.0				0.972
	AMPA	97.8	70.8	70.8				0.0090
	Bentazon	89.6	42.6	42.9				0.354
	Benzovindiflupyr	80.6	86.6	80.7				7.01
	Carbamazepine	93.1	73.9	74.2				0.359
	Clothianidin	93.9	91.9	92.4				0.562
	Dinotefuran	114	143	134				6.70
	Diuron	74.0	65.1	61.0				6.47
	Endothall	133	134	153				13.4
	Fenuron	102	77.1	74.8				3.00
	Fluridone	76.1	79.9	65.1				19.0
	Glufosinate	123	109	124				12.8
	Glyphosate	114	160	148				1.65
	Hydrocodone	88.9	88.4	85.6				3.30
	Ibuprofen	82.1	78.2	67.9				14.2
	Imazapyr	93.5						2.13
	Imidacloprid	99.2	157	145				7.96
	Linuron	71.5	66.0	61.7				6.70
	Mandestrobin	84.5	86.2	81.0				6.29
	MCPP	120	125	104				18.9
	Naproxen	102	105	68.3				42.3
	Primidone	92.7	96.6	89.8				7.29

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	81.0	99.5	83.6		17.3
	Sucralose	101	88.9	94.8		3.75
	Thiamethoxam	95.3	138	136		1.24
	Tolfenpyrad	40.0	47.2	46.0		2.52
	Triclopyr	102	105	99.7		5.53
SM 2120 B-2011	Color (true)	101			1.76	
SM 2320 B-2011	Total Alkalinity	99.1			0.852	
SM 2540 C-2011	TDS				2.83	
SM 2540 D-2011	TSS				6.06	
SM 4500 F-C-2011	Fluoride	98.8	103	105		1.42
SM 5310 B-2011	Organic Carbon	96.8	97.9	99.2		0.989

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2161726, 2161729
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2161755, 2161756
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2161755, 2161756
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2161726, 2161729
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2161726, 2161729
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2161727, 2161730
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2161727, 2161730
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2161727, 2161730
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2161727, 2161730
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2161728, 2161731
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2161751
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2161751
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2161726, 2161729
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2161726, 2161729
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2161726, 2161729
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2161726, 2161729
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2161726, 2161729
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2161727, 2161730

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	03/03/2020			03/03/2020 18:12	Samantha Davila	2161726, 2161729
EPA 200.7 Rev. 4.4	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 16:39	Betina Topolski	2161755
	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 16:45	Betina Topolski	2161756
EPA 200.8 Rev. 5.4	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 17:24	Alexander Thompson	2161755
	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 17:33	Alexander Thompson	2161756
	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 15:14	Justin Cutchin	2161755
	03/03/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 15:24	Justin Cutchin	2161756
EPA 300.0 Rev. 2.1	03/03/2020			03/09/2020 21:41	Lipi Saha	2161726
	03/03/2020			03/09/2020 21:53	Lipi Saha	2161729
EPA 350.1 Rev. 2.0	03/03/2020			03/04/2020 14:29	Ping Hua	2161727
	03/03/2020			03/04/2020 14:30	Ping Hua	2161730
EPA 351.2 Rev. 2.0	03/03/2020	03/05/2020 12:27	Sima Feizi	03/06/2020 17:43	Julia Storbeck	2161727
	03/03/2020	03/05/2020 12:35	Sima Feizi	03/06/2020 20:33	Julia Storbeck	2161730
EPA 353.2 Rev. 2.0	03/03/2020			03/06/2020 11:11	Beverly Y. Sanders	2161727
	03/03/2020			03/06/2020 11:12	Beverly Y. Sanders	2161730
EPA 365.1 Rev. 2.0	03/03/2020	03/09/2020 14:56	Yen Ta	03/12/2020 13:31	Benjamin T. Nordmann	2161727
	03/03/2020	03/09/2020 14:56	Yen Ta	03/12/2020 13:32	Benjamin T. Nordmann	2161730
EPA 365.1 Rev. 2.0 dissolved	03/03/2020			03/03/2020 16:16	Carlos Miranda	2161728
	03/03/2020			03/03/2020 16:17	Carlos Miranda	2161731
EPA 8321B	03/03/2020	03/03/2020 15:15	Rebecca Ware	03/03/2020 17:56	Rebecca Ware	2161751
	03/03/2020	03/03/2020 15:15	Rebecca Ware	03/04/2020 18:33	Rebecca Ware	2161751
	03/03/2020	03/03/2020 15:15	Rebecca Ware	03/13/2020 01:07	Rebecca Ware	2161751
	03/03/2020	03/06/2020 10:00	Hoor Shaik	03/12/2020 03:30	Juyoung Kim	2161751
SM 2120 B-2011	03/03/2020			03/03/2020 18:30		2161726
	03/03/2020			03/03/2020 18:31		2161729
SM 2320 B-2011	03/03/2020			03/07/2020 14:59	Samantha Davila	2161726
	03/03/2020			03/07/2020 17:23	Samantha Davila	2161729
SM 2540 C-2011	03/03/2020			03/05/2020 15:08	Yijie Li	2161726, 2161729
SM 2540 D-2011	03/03/2020			03/05/2020 15:08	Yijie Li	2161726, 2161729
SM 4500 F-C-2011	03/03/2020			03/07/2020 14:59	Samantha Davila	2161726
	03/03/2020			03/07/2020 17:23	Samantha Davila	2161729
SM 5310 B-2011	03/03/2020			03/06/2020 19:01	Lauren Lees	2161727
	03/03/2020			03/06/2020 19:13	Lauren Lees	2161730