

Chemical Analysis Report

NE-DIST-2020-03-13-01

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

Event Description: **Nassau West 2 2020**

Request ID: **RQ-2020-03-09-16**

Customer: **NE-DIST**

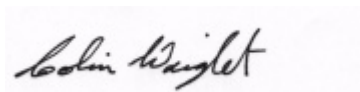
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 01-APR-2020 13:51

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Unnamed Branch @ CR 125

Collection Date/Time: 03/12/2020 10:55

Field ID: 19010123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2165065	EPA 8321B	2,4-D	0.0020	U	ug/L	P380689	
		Acesulfame K**	0.10	U	ug/L	P380621	
		AMPA**	0.10	U	ug/L	P380621	
		Sucralose**	0.010	U	ug/L	P380621	
		Acetaminophen**	0.0080	U	ug/L	P380689	
		Acetamiprid**	0.0020	U	ug/L	P380689	
		Endothall**	0.25	U	ug/L	P380621	
		Glufosinate**	0.10	U	ug/L	P380621	
		Glyphosate**	0.10	U	ug/L	P380621	
		Afidopyropen**	0.0020	UJ	ug/L	P380689	
		Bentazon	8.0E-04	U	ug/L	P380689	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380689	
		Carbamazepine**	8.0E-04	U	ug/L	P380689	
		Clothianidin**	0.0020	U	ug/L	P380689	
		Dinotefuran**	0.0020	U	ug/L	P380689	
		Diuron	0.0020	U	ug/L	P380689	
		Fenuron	0.016	U	ug/L	P380689	
		Fluridone**	8.0E-04	U	ug/L	P380689	
		Imazapyr**	0.0040	U	ug/L	P380689	
		Hydrocodone**	0.0020	U	ug/L	P380689	
		Ibuprofen**	0.020	U	ug/L	P380689	
		Imidacloprid	0.0030	I	ug/L	P380689	
		Linuron	0.0040	U	ug/L	P380689	
		Mandestrobin**	0.0020	UJ	ug/L	P380689	
		MCPP	0.0020	U	ug/L	P380689	MS
		Naproxen**	0.0080	U	ug/L	P380689	
		Primidone**	0.0040	U	ug/L	P380689	
		Pyraclostrobin**	0.0020	U	ug/L	P380689	
		Thiamethoxam**	0.0020	U	ug/L	P380689	
		Tolfenpyrad**	0.0020	U	ug/L	P380689	
		Triclopyr**	0.0040	U	ug/L	P380689	

Ref. Method and Comment:

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

Sample Location: Deep CR @ US 90

Collection Date/Time: 03/12/2020 12:00

Field ID: 19010085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2165033	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P380720	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P380936	
		Sulfate	4.2		mg SO4/L	P380938	
	SM 2120 B-2011	Color (true)	360		PCU	P380651	
	SM 2320 B-2011	Total Alkalinity	28		mg CaCO3/L	P381068	
	SM 2540 C-2011	TDS	131		mg/L	P381190	
	SM 2540 D-2011	TSS	3	I	mg/L	P381222	
	SM 4500 F-C-2011	Fluoride	0.057	I	mg F/L	P381264	
2165034	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P381044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P380958	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.095		mg N/L	P381326	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P381166	
	SM 5310 B-2011	Organic Carbon	33		mg C/L	P380753	
2165035	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P380646	
2165068	EPA 200.7 Rev. 4.4	Barium	20.2		ug/L	P380736	
		Calcium	13.2		mg/L	P380736	
		Iron	1.08E+03		ug/L	P380736	
		Magnesium	3.02		mg/L	P380736	
		Potassium	1.6		mg/L	P380736	
		Sodium	12.3		mg/L	P380736	
		Zinc	8.9	I	ug/L	P380736	
	EPA 200.8 Rev. 5.4	Aluminum	551		ug/L	P380736	
		Antimony	0.12	I	ug/L	P380736	
		Arsenic	0.58		ug/L	P380736	
		Boron**	50.2		ug/L	P380736	
		Cadmium	0.021	I	ug/L	P380736	
		Chromium	1.6	I	ug/L	P380736	
		Copper	0.95		ug/L	P380736	
		Lead	0.83		ug/L	P380736	
		Nickel	1.1	I	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	
	SM 2340B	Hardness	45.3		mg/L	P380736	

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: St Marys S Prong @ US 90

Collection Date/Time: 03/12/2020 10:35

Field ID: 19010021

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2165027	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P380720	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P380936	
		Sulfate	1.9		mg SO4/L	P380938	
	SM 2120 B-2011	Color (true)	250		PCU	P380650	
	SM 2320 B-2011	Total Alkalinity	3.5		mg CaCO3/L	P381068	
	SM 2540 C-2011	TDS	95		mg/L	P381190	
	SM 2540 D-2011	TSS	3	I	mg/L	P381222	
	SM 4500 F-C-2011	Fluoride	0.038	I	mg F/L	P381264	
2165029	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P381043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P380958	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P381326	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P381166	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P380753	
2165031	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.085		mg P/L	P380646	
2165066	EPA 200.7 Rev. 4.4	Barium	24.6		ug/L	P380736	
		Calcium	5.15		mg/L	P380736	
		Iron	620		ug/L	P380736	
		Magnesium	2.03		mg/L	P380736	
		Potassium	0.93	I	mg/L	P380736	
		Sodium	8.7		mg/L	P380736	
		Zinc	6.0	I	ug/L	P380736	
		Aluminum	660		ug/L	P380736	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.44		ug/L	P380736	
		Boron**	22.2		ug/L	P380736	
		Cadmium	0.020	U	ug/L	P380736	
		Chromium	0.94	I	ug/L	P380736	
		Copper	0.49	I	ug/L	P380736	
		Lead	0.55		ug/L	P380736	
		Nickel	0.81	I	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	
		Hardness	21.2		mg/L	P380736	

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 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/27/2020.

Sample Location: St Marys River at SR 121 GA Line

Collection Date/Time: 03/12/2020 10:00

Field ID: 19010002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2165028	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P380720	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P380936	
		Sulfate	0.60		mg SO4/L	P380938	
		Color (true)	380		PCU	P380651	
	SM 2120 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P381068	
	SM 2540 C-2011	TDS	104	A	mg/L	P381190	
	SM 2540 D-2011	TSS	2	IA	mg/L	P381222	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381264	
2165030	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P381043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P380958	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P381326	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P381166	
	SM 5310 B-2011	Organic Carbon	45		mg C/L	P380753	
2165032	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P380646	
2165067	EPA 200.7 Rev. 4.4	Barium	15.9		ug/L	P380736	
		Calcium	2.21		mg/L	P380736	
		Iron	740		ug/L	P380736	
		Magnesium	1.25		mg/L	P380736	
		Potassium	0.30	U	mg/L	P380736	
		Sodium	5.3		mg/L	P380736	
		Zinc	6.3	I	ug/L	P380736	
	EPA 200.8 Rev. 5.4	Aluminum	609		ug/L	P380736	
		Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.40		ug/L	P380736	
		Boron**	15.0		ug/L	P380736	
		Cadmium	0.023	I	ug/L	P380736	
		Chromium	0.70	I	ug/L	P380736	
		Copper	2.82		ug/L	P380736	
		Lead	0.88		ug/L	P380736	
		Nickel	0.61	I	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	
		Hardness	10.7		mg/L	P380736	
	SM 2340B						

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 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/27/2020.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380720

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380736

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: P380736

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: P380936

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380938

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381043

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381044

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380958

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381326

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381166

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380646

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

Reference Method: EPA 8321B
Batch ID: P380621

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: P380689

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: P380689

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: P380650

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P380651

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P381068

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

Reference Method: SM 2540 C-2011
Batch ID: P381190

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P381222

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381264

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P380753

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: P380736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.5		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	97.5		P	85 - 115
Boron	95.6		P	85 - 115
Cadmium	96.5		P	85 - 115
Chromium	100		P	85 - 115
Copper	96.5		P	85 - 115
Lead	92.7		P	85 - 115
Nickel	95.5		P	85 - 115
Selenium	96.7		P	85 - 115
Silver	98.1		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380936

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380938

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381044

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	90.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381166

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.0		P	40 - 150
AMPA	92.0		P	40 - 150
Endothall	126		P	40 - 150
Glufosinate	124		P	40 - 150
Glyphosate	92.8		P	40 - 140
Sucralose	103		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	147		P	30 - 160
Acetaminophen	101		P	30 - 160
Acetamiprid	91.4		P	30 - 160
Afidopyropen	98.9		P	30 - 160
Bentazon	98.6		P	30 - 160
Benzovindiflupyr	88.9		P	30 - 160
Carbamazepine	124		P	30 - 160
Clothianidin	95.1		P	30 - 160
Dinotefuran	95.3		P	30 - 160
Diuron	96.5		P	30 - 160
Fenuron	96.2		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	106		P	30 - 160
Ibuprofen	93.3		P	30 - 160
Imazapyr	120		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	87.3		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	95.3		P	30 - 160
MCP	157		P	30 - 160
Naproxen	107		P	30 - 160
Primidone	93.2		P	30 - 160
Pyraclostrobin	94.2		P	30 - 160
Thiamethoxam	108		P	30 - 160
Tolfenpyrad	65.7		P	30 - 160
Triclopyr	111		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P380650

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

Reference Method: SM 2120 B-2011
Batch ID: P380651

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

Reference Method: SM 2320 B-2011
Batch ID: P381068

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

Reference Method: SM 4500 F-C-2011
Batch ID: P381264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.8		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164511	Barium	99.1	100	P/P	80 - 120
2164511	Calcium	101		P	80 - 120
2164511	Iron	104	103	P/P	80 - 120
2164511	Magnesium	102	101	P/P	80 - 120
2164511	Potassium	101	101	P/P	80 - 120
2164511	Sodium	100	105	P/P	80 - 120
2164511	Zinc	100	101	P/P	80 - 120
2164731	Barium	102		P	80 - 120
2164731	Calcium	102		P	80 - 120
2164731	Iron	104		P	80 - 120
2164731	Magnesium	99.2		P	80 - 120
2164731	Potassium	101		P	80 - 120
2164731	Sodium	99.4		P	80 - 120
2164731	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164511	Aluminum	96.3	95.5	P/P	80 - 120
2164511	Antimony	100	101	P/P	80 - 120
2164511	Arsenic	97.2	98.7	P/P	80 - 120
2164511	Boron	95.5	96.4	P/P	80 - 120
2164511	Cadmium	102	101	P/P	80 - 120
2164511	Chromium	98.4	99.0	P/P	80 - 120
2164511	Copper	95.4	97.0	P/P	80 - 120
2164511	Lead	92.5	93.2	P/P	80 - 120
2164511	Nickel	95.6	96.1	P/P	80 - 120
2164511	Selenium	92.1	95.6	P/P	80 - 120
2164511	Silver	99.1	99.2	P/P	80 - 120
2164511	Thallium	106	108	P/P	80 - 120
2164731	Aluminum	95.9		P	80 - 120
2164731	Antimony	103		P	80 - 120
2164731	Arsenic	105		P	80 - 120
2164731	Boron	101		P	80 - 120
2164731	Cadmium	99.4		P	80 - 120
2164731	Chromium	104		P	80 - 120
2164731	Copper	98.6		P	80 - 120
2164731	Lead	96.3		P	80 - 120
2164731	Nickel	97.1		P	80 - 120
2164731	Selenium	100		P	80 - 120
2164731	Silver	96.9		P	80 - 120
2164731	Thallium	109		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164994	Chloride	98.1		P	90 - 110
2165028	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164994	Sulfate	97.7		P	90 - 110
2165028	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165003	Ammonia-N	97.5	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165084	Ammonia-N	96.0	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165003	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165029	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164996	O-Phosphate-P	98.4	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164419	Acesulfame K	86.4	86.2	P/P	40 - 150
2164419	AMPA	109	111	P/P	40 - 150
2164419	Endothall	142	144	P/P	40 - 150
2164419	Glufosinate	108	117	P/P	40 - 150
2164419	Glyphosate	73.4	78.7	P/P	40 - 140
2164419	Sucralose	114	106	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164417	2,4-D	132	151	P/P	30 - 160
2164417	Acetaminophen	92.0	94.0	P/P	30 - 160
2164417	Acetamiprid	95.0	93.7	P/P	30 - 160
2164417	Afidopyropen	92.8	94.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164417	Bentazon	76.3	87.3	P/P	30 - 160
2164417	Benzovindiflupyr	73.1	79.9	P/P	30 - 160
2164417	Carbamazepine	101	101	P/P	30 - 160
2164417	Clothianidin	95.8	105	P/P	30 - 160
2164417	Dinotefuran	114	117	P/P	30 - 160
2164417	Diuron	80.0	84.4	P/P	30 - 160
2164417	Fenuron	85.3	85.1	P/P	30 - 160
2164417	Fluridone	86.2	88.2	P/P	30 - 160
2164417	Hydrocodone	105	107	P/P	30 - 160
2164417	Ibuprofen	81.6	71.3	P/P	30 - 160
2164417	Imazapyr	126	91.1	P/P	30 - 160
2164417	Imidacloprid	158	147	P/P	30 - 160
2164417	Linuron	74.3	74.6	P/P	30 - 160
2164417	Mandestrobin	79.4	82.0	P/P	30 - 160
2164417	MCPP	153	160	P/F	30 - 160
2164417	Naproxen	91.7	96.2	P/P	30 - 160
2164417	Primidone	92.4	96.9	P/P	30 - 160
2164417	Pyraclostrobin	78.3	83.5	P/P	30 - 160
2164417	Thiamethoxam	134	129	P/P	30 - 160
2164417	Tolfenpyrad	55.6	55.9	P/P	30 - 160
2164417	Triclopyr	132	105	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P381264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164997	Fluoride	98.9	100	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165002	Organic Carbon	98.5	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165027	Turbidity	3.22	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164511	Barium	1.12	Spike	P	0 - 20
2164511	Calcium	4.08	Spike	P	0 - 20
2164511	Iron	0.779	Spike	P	0 - 20
2164511	Magnesium	0.909	Spike	P	0 - 20
2164511	Potassium	0.400	Spike	P	0 - 20
2164511	Sodium	3.23	Spike	P	0 - 20
2164511	Zinc	0.775	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164511	Aluminum	0.848	Spike	P	0 - 20
2164511	Antimony	0.764	Spike	P	0 - 20
2164511	Arsenic	1.46	Spike	P	0 - 20
2164511	Boron	0.905	Spike	P	0 - 20
2164511	Cadmium	1.63	Spike	P	0 - 20
2164511	Chromium	0.552	Spike	P	0 - 20
2164511	Copper	1.68	Spike	P	0 - 20
2164511	Lead	0.724	Spike	P	0 - 20
2164511	Nickel	0.474	Spike	P	0 - 20
2164511	Selenium	3.62	Spike	P	0 - 20
2164511	Silver	0.0635	Spike	P	0 - 20
2164511	Thallium	1.39	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164994	Chloride	0.350	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164994	Sulfate	0.573	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165003	Ammonia-N	0.755	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165084	Ammonia-N	2.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165084	Kjeldahl Nitrogen	3.95	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165003	NO2NO3-N	0.509	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165029	Total-P	0.0567	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164996	O-Phosphate-P	0.279	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164419	Acesulfame K	0.270	Spike	P	0 - 30
2164419	AMPA	1.33	Spike	P	0 - 30
2164419	Endothall	1.80	Spike	P	0 - 30
2164419	Glufosinate	7.37	Spike	P	0 - 30
2164419	Glyphosate	6.98	Spike	P	0 - 30
2164419	Sucralose	4.63	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164417	2,4-D	12.4	Spike	P	0 - 30
2164417	Acetaminophen	2.17	Spike	P	0 - 30
2164417	Acetamiprid	1.31	Spike	P	0 - 30
2164417	Afidopyropen	1.81	Spike	P	0 - 30
2164417	Bentazon	13.5	Spike	P	0 - 30
2164417	Benzovindiflupyr	8.91	Spike	P	0 - 30
2164417	Carbamazepine	0.397	Spike	P	0 - 30
2164417	Clothianidin	8.99	Spike	P	0 - 30
2164417	Dinotefuran	3.27	Spike	P	0 - 30
2164417	Diuron	4.85	Spike	P	0 - 30
2164417	Fenuron	0.243	Spike	P	0 - 30
2164417	Fluridone	1.93	Spike	P	0 - 30
2164417	Hydrocodone	1.75	Spike	P	0 - 30
2164417	Ibuprofen	13.5	Spike	P	0 - 30
2164417	Imazapyr	21.6	Spike	P	0 - 30
2164417	Imidacloprid	6.63	Spike	P	0 - 30
2164417	Linuron	0.384	Spike	P	0 - 30
2164417	Mandestrobin	3.32	Spike	P	0 - 30
2164417	MCPP	4.84	Spike	P	0 - 30
2164417	Naproxen	4.77	Spike	P	0 - 30
2164417	Primidone	4.75	Spike	P	0 - 30
2164417	Pyraclostrobin	6.34	Spike	P	0 - 30
2164417	Thiamethoxam	3.85	Spike	P	0 - 30
2164417	Tolfenpyrad	0.428	Spike	P	0 - 30
2164417	Triclopyr	23.2	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P380650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165001	Color (true)	0.894	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165172	Color (true)	0.560	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P381068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164997	Total Alkalinity	0.211	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P381190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165028	TDS	0.957	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164997	Fluoride	0.986	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P380753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165002	Organic Carbon	0.0816	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2165065
Field Sample ID: 19010123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.0	P	30 - 160
EPA 8321B	Diuron-d6	79.7	P	30 - 160
EPA 8321B	Endothall-d6	92.6	P	30 - 160
EPA 8321B	Endothall-d6	92.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.3	P	30 - 160
EPA 8321B	Primidone-d5	82.5	P	30 - 160
EPA 8321B	Sucralose-d6	89.8	P	30 - 160
EPA 8321B	Sucralose-d6	89.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98188

Included Lab Sample IDs: 2165031, 2165032, 2165035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	96.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98191

Included Lab Sample IDs: 2165027, 2165028, 2165033

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

Reference Method: EPA 8321B

Run ID: A98208

Included Lab Sample IDs: 2165065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.2	83.5	P/P	40 - 200
Glufosinate	116	118	P/P	40 - 200
Glyphosate	88.0	98.1	P/P	40 - 200

Reference Method: EPA 8321B

Run ID: A98210

Included Lab Sample IDs: 2165065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	85.3	86.7	P/P	60 - 160
Endothall	125	129	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98220

Included Lab Sample IDs: 2165027, 2165028, 2165033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A98229

Included Lab Sample IDs: 2165065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	110	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A98233

Included Lab Sample IDs: 2165029, 2165030, 2165034

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98252

Included Lab Sample IDs: 2165066, 2165067, 2165068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	104	106	P/P	90 - 110
Calcium	108	109	P/P	90 - 110
Magnesium	109	110	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	106	106	P/P	90 - 110
Zinc	102	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98256

Included Lab Sample IDs: 2165066, 2165067, 2165068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.9	102	P/P	90 - 110
Antimony	92.3	94.0	P/P	90 - 110
Arsenic	93.7	94.7	P/P	90 - 110
Boron	98.9	98.2	P/P	90 - 110
Cadmium	94.2	94.0	P/P	90 - 110
Chromium	95.2	94.3	P/P	90 - 110
Copper	94.8	95.4	P/P	90 - 110
Nickel	95.3	96.3	P/P	90 - 110
Selenium	93.6	92.8	P/P	90 - 110
Silver	95.9	95.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98259

Included Lab Sample IDs: 2165027, 2165028, 2165033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Chloride	98.9	100	P/P	90 - 110
Sulfate	101	99.8	P/P	90 - 110
Sulfate	99.2	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98280

Included Lab Sample IDs: 2165066, 2165067, 2165068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	103	102	P/P	90 - 110
Thallium	97.8	97.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98283

Included Lab Sample IDs: 2165066, 2165067, 2165068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.4	96.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98337

Included Lab Sample IDs: 2165029, 2165030, 2165034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.9	P/P	90 - 110
Ammonia-N	99.2	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98350

Included Lab Sample IDs: 2165027, 2165028, 2165033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98369

Included Lab Sample IDs: 2165029, 2165030, 2165034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	96.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98394

Included Lab Sample IDs: 2165065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	121	107	P/P	50 - 150
Acetaminophen	110	114	P/P	60 - 160
Acetamiprid	111	110	P/P	50 - 150
Afidopyropen	102	86.7	P/P	50 - 150
Bentazon	144	123	P/P	50 - 160
Benzovindiflupyr	101	101	P/P	50 - 150
Carbamazepine	120	102	P/P	60 - 150
Clothianidin	98.2	91.8	P/P	60 - 150
Dinotefuran	102	98.8	P/P	50 - 150
Diuron	118	109	P/P	60 - 150
Fenuron	104	103	P/P	60 - 150
Fluridone	99.2	106	P/P	60 - 160
Hydrocodone	101	110	P/P	60 - 150
Ibuprofen	115	112	P/P	50 - 160
Imazapyr	100	103	P/P	50 - 150
Imidacloprid	98.2	108	P/P	60 - 150
Linuron	115	102	P/P	60 - 150
Mandestrobin	108	108	P/P	50 - 150
MCP	116	102	P/P	50 - 150
Naproxen	129	103	P/P	50 - 160
Primidone	82.9	92.4	P/P	60 - 150
Pyraclostrobin	109	107	P/P	60 - 150
Thiamethoxam	108	87.6	P/P	50 - 150
Tolfenpyrad	105	107	P/P	60 - 150
Triclopyr	113	108	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98423

Included Lab Sample IDs: 2165029, 2165034

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

Reference Method: SM 4500 F-C-2011

Run ID: A98428

Included Lab Sample IDs: 2165027, 2165028, 2165033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.0	96.7	P/P	90 - 110
Fluoride	98.1	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98429

Included Lab Sample IDs: 2165030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98453

Included Lab Sample IDs: 2165029, 2165030, 2165034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	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						3.22	
EPA 200.7 Rev. 4.4	Barium	102	99.1	100	102			1.12
	Calcium	103	101	102				4.08
	Iron	106	104	104	103			0.779
	Magnesium	106	102	101	99.2			0.909
	Potassium	101	101	101	101			0.400
	Sodium	101	100	105	99.4			3.23
	Zinc	103	100	101	103			0.775
EPA 200.8 Rev. 5.4	Aluminum	94.5	96.3	95.5	95.9			0.848
	Antimony	98.4	103	100	101			0.764
	Arsenic	97.5	97.2	98.7	105			1.46
	Boron	95.6	95.5	96.4	101			0.905
	Cadmium	96.5	102	101	99.4			1.63
	Chromium	100	98.4	99.0	104			0.552
	Copper	96.5	95.4	97.0	98.6			1.68
	Lead	92.7	92.5	93.2	96.3			0.724
	Nickel	95.5	95.6	96.1	97.1			0.474
	Selenium	96.7	92.1	95.6	100			3.62
	Silver	98.1	99.1	99.2	96.9			0.0635
	Thallium	104	106	108	109			1.39
EPA 300.0 Rev. 2.1	Chloride	101	98.1	100			0.350	
	Sulfate	100	97.7	101			0.573	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	97.5	96.6				0.755
	Ammonia-N	98.2	96.0	98.4				2.10
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	90.2						3.95
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5	98.5	98.0				0.509
EPA 365.1 Rev. 2.0	Total-P	106	106	106				0.0567
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	98.4	97.9				0.279
EPA 8321B	2,4-D	147	132	151				12.4
	Acesulfame K	79.0	86.4	86.2				0.270
	Acetaminophen	101	92.0	94.0				2.17
	Acetamiprid	91.4	95.0	93.7				1.31
	Afidopyropen	98.9	92.8	94.5				1.81
	AMPA	92.0	109	111				1.33
	Bentazon	98.6	76.3	87.3				13.5
	Benzovindiflupyr	88.9	73.1	79.9				8.91
	Carbamazepine	124	101	101				0.397
	Clothianidin	95.1	95.8	105				8.99
	Dinotefuran	95.3	114	117				3.27
	Diuron	96.5	80.0	84.4				4.85
	Endothall	126	142	144				1.80
	Fenuron	96.2	85.3	85.1				0.243
	Fluridone	101	86.2	88.2				1.93
	Glufosinate	124	108	117				7.37
	Glyphosate	92.8	73.4	78.7				6.98
	Hydrocodone	106	105	107				1.75
	Ibuprofen	93.3	81.6	71.3				13.5
	Imazapyr	120	126	91.1				21.6
	Imidacloprid	107	158	147				6.63
	Linuron	87.3	74.3	74.6				0.384
	Mandestrobin	95.3	79.4	82.0				3.32
	MCP	157	153	160				4.84
	Naproxen	107	91.7	96.2				4.77
	Primidone	93.2	92.4	96.9				4.75

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	94.2	78.3	83.5		6.34
	Sucralose	103	114	106		4.63
	Thiamethoxam	108	134	129		3.85
	Tolfenpyrad	65.7	55.6	55.9		0.428
	Triclopyr	111	132	105		23.2
SM 2120 B-2011	Color (true)	102			0.894	
	Color (true)	101			0.560	
SM 2320 B-2011	Total Alkalinity	106			0.211	
SM 2540 C-2011	TDS				0.957	
SM 4500 F-C-2011	Fluoride	93.8	98.9	100		0.986
SM 5310 B-2011	Organic Carbon	97.6	98.5	98.4		0.0816

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2165027, 2165028, 2165033
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2165066, 2165067, 2165068
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2165066, 2165067, 2165068
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2165027, 2165028, 2165033
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2165027, 2165028, 2165033
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2165029, 2165030, 2165034
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2165029, 2165030, 2165034
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2165029, 2165030, 2165034
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2165029, 2165030, 2165034
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2165031, 2165032, 2165035
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2165065
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2165065
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2165027, 2165028, 2165033
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2165027, 2165028, 2165033
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2165066, 2165067, 2165068
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2165027, 2165028, 2165033
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2165027, 2165028, 2165033
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2165027, 2165028, 2165033
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2165029, 2165030, 2165034

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	03/13/2020			03/13/2020 16:42	Yen Ta	2165027, 2165028, 2165033
EPA 200.7 Rev. 4.4	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 03:24	Betina Topolski	2165066
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 03:32	Betina Topolski	2165067
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 03:40	Betina Topolski	2165068
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 15:09	Justin Cutchin	2165066
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 15:13	Justin Cutchin	2165067
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 15:16	Justin Cutchin	2165068
EPA 200.8 Rev. 5.4	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 23:18	Justin Cutchin	2165066
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 23:24	Justin Cutchin	2165067
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 23:30	Justin Cutchin	2165068
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 20:34	Alexander Thompson	2165066
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 20:41	Alexander Thompson	2165067
	03/13/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 20:47	Alexander Thompson	2165068
EPA 300.0 Rev. 2.1	03/13/2020			03/18/2020 22:33	Lipi Saha	2165028
	03/13/2020			03/19/2020 00:58	Lipi Saha	2165027
	03/13/2020			03/19/2020 01:10	Lipi Saha	2165033
EPA 350.1 Rev. 2.0	03/13/2020			03/20/2020 15:15	Ping Hua	2165029
	03/13/2020			03/20/2020 15:17	Ping Hua	2165030
	03/13/2020			03/20/2020 15:33	Ping Hua	2165034
EPA 351.2 Rev. 2.0	03/13/2020	03/19/2020 11:55	Sima Feizi	03/23/2020 09:19	Jhamieka S. Greenwood	2165029
	03/13/2020	03/19/2020 11:55	Sima Feizi	03/23/2020 09:21	Jhamieka S. Greenwood	2165030
	03/13/2020	03/19/2020 11:55	Sima Feizi	03/23/2020 09:23	Jhamieka S. Greenwood	2165034
EPA 353.2 Rev. 2.0	03/13/2020			03/26/2020 10:57	Beverly Y. Sanders	2165029
	03/13/2020			03/26/2020 10:58	Beverly Y. Sanders	2165030
	03/13/2020			03/26/2020 10:59	Beverly Y. Sanders	2165034
EPA 365.1 Rev. 2.0	03/13/2020	03/24/2020 14:46	Lipi Saha	03/25/2020 08:00	Benjamin T. Nordmann	2165029
	03/13/2020	03/24/2020 14:46	Lipi Saha	03/25/2020 08:07	Benjamin T. Nordmann	2165034
	03/13/2020	03/24/2020 14:46	Lipi Saha	03/25/2020 11:15	Benjamin T. Nordmann	2165030
EPA 365.1 Rev. 2.0 dissolved	03/13/2020			03/13/2020 14:30	Carlos Miranda	2165031
	03/13/2020			03/13/2020 14:31	Carlos Miranda	2165032
	03/13/2020			03/13/2020 14:32	Carlos Miranda	2165035
EPA 8321B	03/13/2020	03/13/2020 13:00	Mohammad Ghaffari	03/13/2020 20:08	Mohammad Ghaffari	2165065
	03/13/2020	03/13/2020 13:00	Mohammad Ghaffari	03/15/2020 22:47	Mohammad Ghaffari	2165065
	03/13/2020	03/13/2020 13:00	Mohammad Ghaffari	03/16/2020 19:37	Mohammad Ghaffari	2165065
	03/13/2020	03/17/2020 14:30	Hoor Shaik	03/20/2020 12:25	Juyoung Kim	2165065
SM 2120 B-2011	03/13/2020			03/13/2020 16:54	Madeline Gruver	2165027, 2165028
	03/13/2020			03/13/2020 16:55	Madeline Gruver	2165033
SM 2320 B-2011	03/13/2020			03/21/2020 09:14	Dale L. Simmons	2165027
	03/13/2020			03/21/2020 09:19	Dale L. Simmons	2165028
	03/13/2020			03/21/2020 09:29	Dale L. Simmons	2165033

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340B	03/13/2020			03/18/2020 03:24	Betina Topolski	2165066
	03/13/2020			03/18/2020 03:32	Betina Topolski	2165067
	03/13/2020			03/18/2020 03:40	Betina Topolski	2165068
SM 2540 C-2011	03/13/2020			03/18/2020 15:15	Yijie Li	2165027, 2165028, 2165033
SM 2540 D-2011	03/13/2020			03/18/2020 15:32	Yijie Li	2165027, 2165028, 2165033
SM 4500 F-C-2011	03/13/2020			03/25/2020 00:35	Dale L. Simmons	2165027
	03/13/2020			03/25/2020 00:40	Dale L. Simmons	2165028
	03/13/2020			03/25/2020 00:55	Dale L. Simmons	2165033
SM 5310 B-2011	03/13/2020			03/17/2020 00:48	Lauren Lees	2165029
	03/13/2020			03/17/2020 01:00	Lauren Lees	2165030
	03/13/2020			03/17/2020 01:13	Lauren Lees	2165034