

Chemical Analysis Report

NE-DIST-2020-07-29-01

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-2020-07-27-15**

Customer: **NE-DIST**

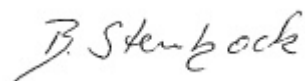
Project ID: **SMP**

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Date Certified: 14-AUG-2020 12:24



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: 07/28/2020 09:45

Field ID: 19010123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186863	EPA 8321B	2,4-D	0.0020	U	ug/L	P385308	
		Acesulfame K**	0.10	U	ug/L	P385298	
		AMPA**	0.10	U	ug/L	P385298	
		Sucralose**	0.052		ug/L	P385298	
		Acetaminophen**	0.0080	U	ug/L	P385308	
		Acetamiprid**	0.0020	U	ug/L	P385308	
		Endothall**	0.25	U	ug/L	P385298	
		Glufosinate**	0.10	U	ug/L	P385298	
		Glyphosate**	0.10	U	ug/L	P385298	
		Afidopyropen**	0.0020	U	ug/L	P385308	
		Bentazon	8.0E-04	U	ug/L	P385308	
		Benzovindiflupyr**	0.0020	U	ug/L	P385308	
		Carbamazepine**	8.0E-04	U	ug/L	P385308	
		Clothianidin**	0.0020	U	ug/L	P385308	
		Dinotefuran**	0.0020	U	ug/L	P385308	
		Diuron	0.0020	U	ug/L	P385308	
		Fenuron	0.016	U	ug/L	P385308	
		Fluridone**	8.0E-04	U	ug/L	P385308	
		Imazapyr**	0.0040	U	ug/L	P385308	
		Hydrocodone**	0.0020	U	ug/L	P385308	
		Ibuprofen**	0.020	U	ug/L	P385308	
		Imidacloprid	0.0020	U	ug/L	P385308	
		Linuron	0.0040	U	ug/L	P385308	
		Mandestrobin**	0.0020	U	ug/L	P385308	
		MCPP	0.0020	U	ug/L	P385308	
		Naproxen**	0.0080	U	ug/L	P385308	
		Primidone**	0.0040	U	ug/L	P385308	
		Pyraclostrobin**	0.0020	U	ug/L	P385308	
		Thiamethoxam**	0.0020	U	ug/L	P385308	
		Tolfenpyrad**	0.0020	U	ug/L	P385308	
		Triclopyr**	0.0040	U	ug/L	P385308	

Ref. Method and Comment:

EPA 8321B: MS accuracy for 2,4-D and bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: St Marys S Prong @ US 90

Collection Date/Time: 07/28/2020 10:05

Field ID: 19010021

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186848	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P385365	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P385626	
		Sulfate	2.9		mg SO4/L	P385630	
		Color (true)	310		PCU	P385355	
	SM 2320 B-2011	Total Alkalinity	9.3		mg CaCO3/L	P385441	
	SM 2540 C-2011	TDS	110		mg/L	P385782	
	SM 2540 D-2011	TSS	2	I	mg/L	P385784	
	SM 4500 F-C-2011	Fluoride	0.068	I	mg F/L	P385444	
2186850	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P385478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P385417	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P385369	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P385506	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P385450	
2186852	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P385326	
2186864	EPA 200.7 Rev. 4.4	Barium	26.8		ug/L	P385397	
		Calcium	6.78		mg/L	P385397	
		Iron	1.39E+03		ug/L	P385397	
		Magnesium	2.49		mg/L	P385397	
		Potassium	1.2		mg/L	P385397	
		Sodium	8.6		mg/L	P385397	
		Zinc	6.5	I	ug/L	P385397	
		Aluminum	632		ug/L	P385397	
		Antimony	0.050	U	ug/L	P385397	
		Arsenic	0.58		ug/L	P385397	
	EPA 200.8 Rev. 5.4	Boron**	26.1		ug/L	P385397	
		Cadmium	0.021	I	ug/L	P385397	
		Chromium	0.87	I	ug/L	P385397	
		Copper	0.51	I	ug/L	P385397	
		Lead	0.68		ug/L	P385397	
		Nickel	0.97	I	ug/L	P385397	
		Selenium	0.20	U	ug/L	P385397	
		Silver	0.010	U	ug/L	P385397	
		Thallium	0.10	U	ug/L	P385397	
		Hardness	27.2		mg/L	P385397	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 08/07/2020.

Sample Location: St Marys River at SR 121 GA Line

Collection Date/Time: 07/28/2020 10:40

Field ID: 19010002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186849	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P385365	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P385626	
		Sulfate	0.40	I	mg SO4/L	P385630	
		Color (true)	670		PCU	P385355	
	SM 2120 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P385441	
	SM 2540 C-2011	TDS	99		mg/L	P385782	
	SM 2540 D-2011	TSS	4	I	mg/L	P385784	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385444	
2186851	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P385478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P385672	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P385369	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P385506	
	SM 5310 B-2011	Organic Carbon	55		mg C/L	P385450	
2186853	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P385326	
2186865	EPA 200.7 Rev. 4.4	Barium	15.9		ug/L	P385397	
		Calcium	1.96		mg/L	P385397	
		Iron	1.94E+03		ug/L	P385397	
		Magnesium	1.09		mg/L	P385397	
		Potassium	0.30	U	mg/L	P385397	
		Sodium	3.7		mg/L	P385397	
		Zinc	5.0	U	ug/L	P385397	
	EPA 200.8 Rev. 5.4	Aluminum	711		ug/L	P385397	
		Antimony	0.050	U	ug/L	P385397	
		Arsenic	0.67		ug/L	P385397	
		Boron**	14.8		ug/L	P385397	
		Cadmium	0.022	I	ug/L	P385397	
		Chromium	0.81	I	ug/L	P385397	
		Copper	0.40	U	ug/L	P385397	
		Lead	0.99		ug/L	P385397	
		Nickel	0.83	I	ug/L	P385397	
		Selenium	0.20	U	ug/L	P385397	
		Silver	0.010	U	ug/L	P385397	
		Thallium	0.10	U	ug/L	P385397	
		Hardness	9.4		mg/L	P385397	

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 08/07/2020.

Sample Location: Deep Cr @ US 90

Collection Date/Time: 07/28/2020 11:15

Field ID: 19010085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186854	EPA 180.1 Rev. 2.0	Turbidity	23		NTU	P385365	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P385626	
		Sulfate	6.9		mg SO4/L	P385630	
		Color (true)	190	A	PCU	P385359	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P385441	
	SM 2540 C-2011	TDS	130		mg/L	P385782	
	SM 2540 D-2011	TSS	8	I	mg/L	P385784	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P385444	
2186855	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P385478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P385417	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P385369	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P385515	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P385450	
2186856	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P385326	
2186866	EPA 200.7 Rev. 4.4	Barium	24.8		ug/L	P385397	
		Calcium	18.7		mg/L	P385397	
		Iron	1.43E+03		ug/L	P385397	
		Magnesium	3.11		mg/L	P385397	
		Potassium	2.1		mg/L	P385397	
		Sodium	8.6		mg/L	P385397	
		Zinc	13	I	ug/L	P385397	
	EPA 200.8 Rev. 5.4	Aluminum	968		ug/L	P385397	
		Antimony	0.33		ug/L	P385397	
		Arsenic	0.98		ug/L	P385397	
		Boron**	76.5		ug/L	P385397	
		Cadmium	0.023	I	ug/L	P385397	
		Chromium	2.1		ug/L	P385397	
		Copper	2.46		ug/L	P385397	
		Lead	1.95		ug/L	P385397	
		Nickel	1.4	I	ug/L	P385397	
		Selenium	0.20	U	ug/L	P385397	
		Silver	0.010	U	ug/L	P385397	
		Thallium	0.10	U	ug/L	P385397	
		Hardness	59.4		mg/L	P385397	
	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 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 08/07/2020.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385365

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

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: P385397

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: P385626

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385478

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: P385417

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385672

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385369

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385515

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385326

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

Reference Method: EPA 8321B
Batch ID: P385298

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: P385308

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385308

Component	Result	Code	Units
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P385355

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P385359

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385441

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

Reference Method: SM 2540 C-2011
Batch ID: P385782

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385784

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P385444

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385450

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: P385397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.0		P	85 - 115
Calcium	101		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.5		P	85 - 115
Antimony	93.9		P	85 - 115
Arsenic	95.0		P	85 - 115
Boron	99.9		P	85 - 115
Cadmium	93.0		P	85 - 115
Chromium	95.2		P	85 - 115
Copper	102		P	85 - 115
Lead	96.2		P	85 - 115
Nickel	101		P	85 - 115
Selenium	89.7		P	85 - 115
Silver	106		P	85 - 115
Thallium	95.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385478

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385672

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: P385369

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385515

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385326

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

Reference Method: EPA 8321B
Batch ID: P385298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	82.0		P	40 - 150
Endothall	97.0		P	40 - 150
Glufosinate	92.9		P	40 - 150
Glyphosate	89.5		P	40 - 140
Sucralose	89.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	93.9		P	30 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	80.1		P	30 - 160
Afidopyropen	68.4		P	30 - 160
Bentazon	68.9		P	30 - 160
Benzovindiflupyr	59.6		P	30 - 160
Carbamazepine	73.9		P	30 - 160
Clothianidin	91.5		P	30 - 160
Dinotefuran	93.3		P	30 - 160
Diuron	67.5		P	30 - 160
Fenuron	92.9		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	97.5		P	30 - 160
Hydrocodone	83.9		P	30 - 160
Ibuprofen	79.0		P	30 - 160
Imazapyr	58.2		P	30 - 160
Imidacloprid	113		P	30 - 160
Linuron	69.3		P	30 - 160
Mandestrobin	78.5		P	30 - 160
MCPP	112		P	30 - 160
Naproxen	62.6		P	30 - 160
Primidone	92.3		P	30 - 160
Pyraclostrobin	56.9		P	30 - 160
Thiamethoxam	91.1		P	30 - 160
Tolfenpyrad	30.9		P	30 - 160
Triclopyr	70.2		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P385355

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

Reference Method: SM 2120 B-2011
Batch ID: P385359

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

Reference Method: SM 2320 B-2011
Batch ID: P385441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385450

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186892	Barium	96.8	102	P/P	80 - 120
2186892	Calcium	102	102	P/P	80 - 120
2186892	Iron	106	106	P/P	80 - 120
2186892	Magnesium	104	103	P/P	80 - 120
2186892	Potassium	102	103	P/P	80 - 120
2186892	Sodium	99.9		P	80 - 120
2186892	Zinc	100	105	P/P	80 - 120
2187196	Barium	103		P	80 - 120
2187196	Calcium	99.0		P	80 - 120
2187196	Iron	105		P	80 - 120
2187196	Magnesium	103		P	80 - 120
2187196	Potassium	102		P	80 - 120
2187196	Sodium	99.7		P	80 - 120
2187196	Zinc	107		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186892	Aluminum	91.9	91.3	P/P	80 - 120
2186892	Antimony	96.4	95.0	P/P	80 - 120
2186892	Arsenic	95.6	94.1	P/P	80 - 120
2186892	Boron	101	102	P/P	80 - 120
2186892	Cadmium	92.7	91.5	P/P	80 - 120
2186892	Chromium	98.3	98.2	P/P	80 - 120
2186892	Copper	102	102	P/P	80 - 120
2186892	Lead	100	99.2	P/P	80 - 120
2186892	Nickel	100	99.6	P/P	80 - 120
2186892	Selenium	87.9	86.8	P/P	80 - 120
2186892	Silver	106	105	P/P	80 - 120
2186892	Thallium	99.9	100	P/P	80 - 120
2187196	Aluminum	92.8		P	80 - 120
2187196	Antimony	97.6		P	80 - 120
2187196	Arsenic	96.8		P	80 - 120
2187196	Boron	105		P	80 - 120
2187196	Cadmium	96.7		P	80 - 120
2187196	Chromium	100		P	80 - 120
2187196	Copper	103		P	80 - 120
2187196	Lead	100		P	80 - 120
2187196	Nickel	102		P	80 - 120
2187196	Selenium	86.6		P	80 - 120
2187196	Silver	105		P	80 - 120
2187196	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186495	Chloride	103		P	90 - 110
2186871	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186495	Sulfate	103		P	90 - 110
2186871	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186719	Ammonia-N	98.4	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186809	Kjeldahl Nitrogen	113	102	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186809	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186502	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186855	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186720	O-Phosphate-P	100	99.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186301	Acesulfame K	105	108	P/P	40 - 150
2186301	AMPA	49.0	60.6	P/P	40 - 150
2186301	Endothall	118	121	P/P	40 - 150
2186301	Glufosinate	93.5	106	P/P	40 - 150
2186301	Glyphosate	77.8	77.8	P/P	40 - 140
2186301	Sucralose	93.7	98.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Acetaminophen	81.0	81.0	P/P	30 - 160
2186499	Acetamiprid	72.3	72.1	P/P	30 - 160
2186499	Afidopyropen	68.1	62.0	P/P	30 - 160
2186499	Benzovindiflupyr	54.4	51.4	P/P	30 - 160
2186499	Carbamazepine	60.4	59.5	P/P	30 - 160
2186499	Clothianidin	78.8	81.8	P/P	30 - 160
2186499	Dinotefuran	86.9	88.0	P/P	30 - 160
2186499	Diuron	50.1	50.6	P/P	30 - 160
2186499	Fenuron	74.3	72.3	P/P	30 - 160
2186499	Fluridone	92.2	91.9	P/P	30 - 160
2186499	Hydrocodone	71.4	67.6	P/P	30 - 160
2186499	Ibuprofen	60.6	64.1	P/P	30 - 160
2186499	Imazapyr	61.8	50.6	P/P	30 - 160
2186499	Imidacloprid	131	135	P/P	30 - 160
2186499	Linuron	55.8	58.1	P/P	30 - 160
2186499	Mandestrobin	71.8	68.2	P/P	30 - 160
2186499	MCCP	101	97.8	P/P	30 - 160
2186499	Naproxen	48.7	48.5	P/P	30 - 160
2186499	Primidone	79.4	93.2	P/P	30 - 160
2186499	Pyraclostrobin	52.9	54.0	P/P	30 - 160
2186499	Thiamethoxam	90.0	78.2	P/P	30 - 160
2186499	Tolfenpyrad	36.3	39.4	P/P	30 - 160
2186499	Triclopyr	60.6	71.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P385444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186828	Fluoride	100	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186874	Organic Carbon	93.2	87.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186808	Turbidity	6.21	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186892	Barium	4.73	Spike	P	0 - 20
2186892	Calcium	0.266	Spike	P	0 - 20
2186892	Iron	0.0716	Spike	P	0 - 20
2186892	Magnesium	0.865	Spike	P	0 - 20
2186892	Potassium	0.343	Spike	P	0 - 20
2186892	Sodium	0.864	Spike	P	0 - 20
2186892	Zinc	5.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186892	Aluminum	0.632	Spike	P	0 - 20
2186892	Antimony	1.48	Spike	P	0 - 20
2186892	Arsenic	1.50	Spike	P	0 - 20
2186892	Boron	0.883	Spike	P	0 - 20
2186892	Cadmium	1.35	Spike	P	0 - 20
2186892	Chromium	0.0570	Spike	P	0 - 20
2186892	Copper	0.0412	Spike	P	0 - 20
2186892	Lead	1.10	Spike	P	0 - 20
2186892	Nickel	0.601	Spike	P	0 - 20
2186892	Selenium	1.18	Spike	P	0 - 20
2186892	Silver	1.14	Spike	P	0 - 20
2186892	Thallium	0.550	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186495	Chloride	0.543	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186495	Sulfate	0.959	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186719	Ammonia-N	0.779	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186809	Kjeldahl Nitrogen	6.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187182	Kjeldahl Nitrogen	4.59	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186809	NO2NO3-N	0.745	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186502	Total-P	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186855	Total-P	1.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186720	O-Phosphate-P	0.846	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Acesulfame K	3.41	Spike	P	0 - 30
2186301	AMPA	21.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Endothall	2.22	Spike	P	0 - 30
2186301	Glufosinate	12.9	Spike	P	0 - 30
2186301	Glyphosate	0.0167	Spike	P	0 - 30
2186301	Sucralose	5.07	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186499	2,4-D	1.18	Spike	P	0 - 30
2186499	Acetaminophen	0.0156	Spike	P	0 - 30
2186499	Acetamiprid	0.348	Spike	P	0 - 30
2186499	Afidopyropen	9.32	Spike	P	0 - 30
2186499	Bentazon	0.458	Spike	P	0 - 30
2186499	Benzovindiflupyr	5.54	Spike	P	0 - 30
2186499	Carbamazepine	1.52	Spike	P	0 - 30
2186499	Clothianidin	3.38	Spike	P	0 - 30
2186499	Dinotefuran	1.28	Spike	P	0 - 30
2186499	Diuron	0.833	Spike	P	0 - 30
2186499	Fenuron	2.75	Spike	P	0 - 30
2186499	Fluridone	0.266	Spike	P	0 - 30
2186499	Hydrocodone	5.39	Spike	P	0 - 30
2186499	Ibuprofen	5.60	Spike	P	0 - 30
2186499	Imazapyr	13.0	Spike	P	0 - 30
2186499	Imidacloprid	2.62	Spike	P	0 - 30
2186499	Linuron	4.10	Spike	P	0 - 30
2186499	Mandestrobin	5.15	Spike	P	0 - 30
2186499	MCP	3.62	Spike	P	0 - 30
2186499	Naproxen	0.365	Spike	P	0 - 30
2186499	Primidone	15.9	Spike	P	0 - 30
2186499	Pyraclostrobin	2.18	Spike	P	0 - 30
2186499	Thiamethoxam	13.9	Spike	P	0 - 30
2186499	Tolfenpyrad	8.17	Spike	P	0 - 30
2186499	Triclopyr	16.5	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P385355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186808	Color (true)	1.72	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P385359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186854	Color (true)	1.52	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P385441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186828	Total Alkalinity	0.282	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P385782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186718	TDS	0.428	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186828	Fluoride	0.454	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186874	Organic Carbon	3.70	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2186863
Field Sample ID: 19010123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.8	P	30 - 160
EPA 8321B	Diuron-d6	55.4	P	30 - 160
EPA 8321B	Endothall-d6	81.8	P	30 - 160
EPA 8321B	Endothall-d6	81.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.7	P	30 - 160
EPA 8321B	Primidone-d5	73.1	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100153

Included Lab Sample IDs: 2186852, 2186853, 2186856

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	99.0	P/P	90 - 110
O-Phosphate-P	97.9	97.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100159

Included Lab Sample IDs: 2186863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.0	95.5	P/P	60 - 160

Reference Method: SM 2120 B-2011

Run ID: A100169

Included Lab Sample IDs: 2186848, 2186849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Reference Method: SM 2120 B-2011

Run ID: A100171

Included Lab Sample IDs: 2186854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100175

Included Lab Sample IDs: 2186850, 2186851, 2186855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100176

Included Lab Sample IDs: 2186848, 2186849, 2186854

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

Reference Method: EPA 8321B

Run ID: A100198

Included Lab Sample IDs: 2186863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	68.0	74.3	P/P	60 - 160
Endothall	103	106	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A100200

Included Lab Sample IDs: 2186848, 2186849, 2186854

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

Reference Method: SM 2320 B-2011

Run ID: A100200

Included Lab Sample IDs: 2186848, 2186849, 2186854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100200

Included Lab Sample IDs: 2186848, 2186849, 2186854

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

Reference Method: SM 5310 B-2011

Run ID: A100203

Included Lab Sample IDs: 2186850, 2186851, 2186855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100212

Included Lab Sample IDs: 2186850, 2186851, 2186855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.8	P/P	90 - 110
Ammonia-N	99.8	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100216

Included Lab Sample IDs: 2186864, 2186865, 2186866

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	98.2	100	P/P	90 - 110
Calcium	101	102	P/P	90 - 110
Iron	104	104	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	100	102	P/P	90 - 110
Sodium	102	103	P/P	90 - 110
Zinc	98.3	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100223

Included Lab Sample IDs: 2186863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.2	70.1	P/P	60 - 160
Glufosinate	105	107	P/P	60 - 160
Glyphosate	95.0	98.1	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100234

Included Lab Sample IDs: 2186850, 2186855

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100234

Included Lab Sample IDs: 2186850, 2186855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	94.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100267

Included Lab Sample IDs: 2186848, 2186849, 2186854

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

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2186863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.9	82.1	P/P	50 - 150
Acetaminophen	116	110	P/P	60 - 160
Acetamiprid	108	113	P/P	50 - 150
Afidopyropen	103	104	P/P	50 - 150
Bentazon	97.0	111	P/P	50 - 160
Benzovindiflupyr	101	90.7	P/P	50 - 150
Carbamazepine	119	120	P/P	60 - 150
Clothianidin	112	116	P/P	60 - 150
Dinotefuran	99.8	94.8	P/P	50 - 150
Diuron	107	111	P/P	60 - 160
Fenuron	114	108	P/P	60 - 150
Fluridone	128	127	P/P	60 - 160
Hydrocodone	105	107	P/P	60 - 150
Ibuprofen	89.5	83.1	P/P	50 - 160
Imazapyr	73.0	67.2	P/P	50 - 150
Imidacloprid	112	114	P/P	60 - 150
Linuron	101	104	P/P	60 - 150
Mandestrobin	123	115	P/P	50 - 150
MCPP	90.3	95.1	P/P	50 - 150
Naproxen	94.0	92.5	P/P	50 - 160
Primidone	111	102	P/P	60 - 150
Pyraclostrobin	101	96.1	P/P	60 - 150
Thiamethoxam	113	112	P/P	50 - 150
Tolfenpyrad	81.1	82.4	P/P	60 - 150
Triclopyr	86.8	77.2	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100284

Included Lab Sample IDs: 2186850, 2186855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	98.7	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100320

Included Lab Sample IDs: 2186851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.9	96.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100326

Included Lab Sample IDs: 2186864, 2186865, 2186866

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.1	94.5	P/P	90 - 110
Antimony	94.6	95.3	P/P	90 - 110
Arsenic	93.9	94.3	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Cadmium	93.2	93.3	P/P	90 - 110
Chromium	96.3	96.7	P/P	90 - 110
Lead	95.9	96.6	P/P	90 - 110
Selenium	91.5	90.5	P/P	90 - 110
Silver	103	104	P/P	90 - 110
Thallium	94.0	94.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100356

Included Lab Sample IDs: 2186864, 2186865, 2186866

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	99.0	P/P	90 - 110
Nickel	101	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100360

Included Lab Sample IDs: 2186851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	97.8	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						6.21	
EPA 200.7 Rev. 4.4	Barium	98.0	96.8	102	103			4.73
	Calcium	101	102	102	99.0			0.266
	Iron	103	106	106	105			0.0716
	Magnesium	103	104	103	103			0.865
	Potassium	101	102	103	102			0.343
	Sodium	101	99.9	99.7				0.864
	Zinc	98.9	100	105	107			5.15
EPA 200.8 Rev. 5.4	Aluminum	91.5	91.9	91.3	92.8			0.632
	Antimony	93.9	96.4	95.0	97.6			1.48
	Arsenic	95.0	96.8	95.6	94.1			1.50
	Boron	99.9	101	102	105			0.883
	Cadmium	93.0	92.7	91.5	96.7			1.35
	Chromium	95.2	98.3	98.2	100			0.0570
	Copper	102	102	102	103			0.0412
	Lead	96.2	100	99.2	100			1.10
	Nickel	101	100	99.6	102			0.601
	Selenium	89.7	87.9	86.8	86.6			1.18
	Silver	106	106	105	105			1.14
	Thallium	95.6	99.9	100	103			0.550
EPA 300.0 Rev. 2.1	Chloride	105	103	104			0.543	
	Sulfate	105	103	104			0.959	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.4	97.4				0.779
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	113	102				6.26
	Kjeldahl Nitrogen	103						4.59
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.2					0.745
EPA 365.1 Rev. 2.0	Total-P	105	107	106				1.14
	Total-P	103	104	106				1.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	100	99.0				0.846
EPA 8321B	2,4-D	93.9						1.18
	Acesulfame K	115	105	108				3.41
	Acetaminophen	87.5	81.0	81.0				0.0156
	Acetamiprid	80.1	72.3	72.1				0.348
	Afidopyropen	68.4	68.1	62.0				9.32
	AMPA	82.0	49.0	60.6				21.2
	Bentazon	68.9						0.458
	Benzovindiflupyr	59.6	51.4	54.4				5.54
	Carbamazepine	73.9	60.4	59.5				1.52
	Clothianidin	91.5	78.8	81.8				3.38
	Dinotefuran	93.3	86.9	88.0				1.28
	Diuron	67.5	50.1	50.6				0.833
	Endothall	97.0	118	121				2.22
	Fenuron	92.9	74.3	72.3				2.75
	Fluridone	97.5	92.2	91.9				0.266
	Glufosinate	92.9	93.5	106				12.9
	Glyphosate	89.5	77.8	77.8				0.0167
	Hydrocodone	83.9	71.4	67.6				5.39
	Ibuprofen	79.0	64.1	60.6				5.60
	Imazapyr	58.2	50.6	61.8				13.0
	Imidacloprid	113	131	135				2.62
	Linuron	69.3	55.8	58.1				4.10
	Mandestrobin	78.5	71.8	68.2				5.15
	MCPP	112	97.8	101				3.62
	Naproxen	62.6	48.5	48.7				0.365

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Primidone	92.3	79.4	93.2		15.9
	Pyraclostrobin	56.9	54.0	52.9		2.18
	Sucralose	89.9	93.7	98.6		5.07
	Thiamethoxam	91.1	90.0	78.2		13.9
	Tolfenpyrad	30.9	39.4	36.3		8.17
	Triclopyr	70.2	71.5	60.6		16.5
SM 2120 B-2011	Color (true)	102			1.72	
	Color (true)	102			1.52	
SM 2320 B-2011	Total Alkalinity	98.6			0.282	
SM 2540 C-2011	TDS				0.428	
SM 4500 F-C-2011	Fluoride	99.5	100	101		0.454
SM 5310 B-2011	Organic Carbon	97.8	93.2	87.8		3.70

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2186848, 2186849, 2186854
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2186864, 2186865, 2186866
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2186864, 2186865, 2186866
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2186848, 2186849, 2186854
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2186848, 2186849, 2186854
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2186850, 2186851, 2186855
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2186850, 2186851, 2186855
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2186850, 2186851, 2186855
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2186850, 2186851, 2186855
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2186852, 2186853, 2186856
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2186863
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2186863
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2186848, 2186849, 2186854
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2186848, 2186849, 2186854
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2186864, 2186865, 2186866
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2186848, 2186849, 2186854
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2186848, 2186849, 2186854
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2186848, 2186849, 2186854
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2186850, 2186851, 2186855

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	07/29/2020			07/29/2020 16:15	Blanca Fach	2186848, 2186849, 2186854
EPA 200.7 Rev. 4.4	07/29/2020	07/30/2020 16:00	Elliott D. Healy	07/31/2020 14:58	Betina Topolski	2186864
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	07/31/2020 15:06	Betina Topolski	2186865
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	07/31/2020 15:11	Betina Topolski	2186866
EPA 200.8 Rev. 5.4	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/06/2020 21:19	Alexander Thompson	2186864
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/06/2020 21:27	Alexander Thompson	2186865
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/06/2020 21:35	Alexander Thompson	2186866
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/07/2020 18:42	Alexander Thompson	2186864
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/07/2020 18:47	Alexander Thompson	2186865
	07/29/2020	07/30/2020 16:00	Elliott D. Healy	08/07/2020 18:52	Alexander Thompson	2186866
EPA 300.0 Rev. 2.1	07/29/2020			08/01/2020 11:31	Julia Storbeck	2186848
	07/29/2020			08/01/2020 11:43	Julia Storbeck	2186849
	07/29/2020			08/01/2020 11:55	Julia Storbeck	2186854
EPA 350.1 Rev. 2.0	07/29/2020			08/01/2020 17:35	Ping Hua	2186851
	07/29/2020			08/01/2020 17:36	Ping Hua	2186855
	07/29/2020			08/01/2020 17:51	Ping Hua	2186850
EPA 351.2 Rev. 2.0	07/29/2020	07/31/2020 10:40	Jhamieka S. Greenwood	08/03/2020 15:23	Julia Storbeck	2186850
	07/29/2020	07/31/2020 10:40	Jhamieka S. Greenwood	08/03/2020 15:26	Julia Storbeck	2186855
	07/29/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 14:20	Jhamieka S. Greenwood	2186851
EPA 353.2 Rev. 2.0	07/29/2020			07/30/2020 08:41	Beverly Y. Sanders	2186850
	07/29/2020			07/30/2020 08:42	Beverly Y. Sanders	2186851
	07/29/2020			07/30/2020 08:43	Beverly Y. Sanders	2186855
EPA 365.1 Rev. 2.0	07/29/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 10:12	Benjamin T. Nordmann	2186850
	07/29/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 10:34	Benjamin T. Nordmann	2186855
	07/29/2020	08/03/2020 10:00	Lipi Saha	08/06/2020 15:01	Benjamin T. Nordmann	2186851
EPA 365.1 Rev. 2.0 dissolved	07/29/2020			07/29/2020 15:03	Virginia P. Brown	2186852
	07/29/2020			07/29/2020 15:08	Virginia P. Brown	2186853
	07/29/2020			07/29/2020 15:09	Virginia P. Brown	2186856
EPA 8321B	07/29/2020	07/29/2020 12:00	Mohammad Ghaffari	07/29/2020 15:28	Mohammad Ghaffari	2186863
	07/29/2020	07/29/2020 12:00	Mohammad Ghaffari	07/30/2020 14:11	Rebecca Ware	2186863
	07/29/2020	07/29/2020 12:00	Mohammad Ghaffari	07/31/2020 13:26	Rebecca Ware	2186863
	07/29/2020	07/30/2020 14:00	Hoor Shaik	08/01/2020 22:45	Juyoung Kim	2186863
SM 2120 B-2011	07/29/2020			07/29/2020 15:49	Madeline Gruver	2186848, 2186849
	07/29/2020			07/29/2020 16:36	Madeline Gruver	2186854
SM 2320 B-2011	07/29/2020			07/30/2020 18:57	Dale L. Simmons	2186848
	07/29/2020			07/30/2020 19:03	Dale L. Simmons	2186849
	07/29/2020			07/30/2020 19:15	Dale L. Simmons	2186854
SM 2340B	07/29/2020			07/31/2020 14:58	Betina Topolski	2186864
	07/29/2020			07/31/2020 15:06	Betina Topolski	2186865
	07/29/2020			07/31/2020 15:11	Betina Topolski	2186866

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2011	07/29/2020			08/03/2020 15:02	Yijie Li	2186848, 2186849, 2186854
SM 2540 D-2011	07/29/2020			08/03/2020 15:02	Yijie Li	2186848, 2186849, 2186854
SM 4500 F-C-2011	07/29/2020			07/30/2020 18:57	Dale L. Simmons	2186848
	07/29/2020			07/30/2020 19:03	Dale L. Simmons	2186849
	07/29/2020			07/30/2020 19:15	Dale L. Simmons	2186854
SM 5310 B-2011	07/29/2020			07/31/2020 04:57	David Boose	2186850
	07/29/2020			07/31/2020 05:09	David Boose	2186851
	07/29/2020			07/31/2020 05:22	David Boose	2186855