

Chemical Analysis Report

NE-DIST-2021-08-20-01

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

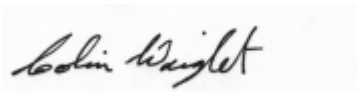
Event Description: **Nassau North 2**
Request ID: **RQ-2021-08-16-16**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 16-SEP-2021 10:07

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: Escambia Slough at Escambia St.

Collection Date/Time: 08/19/2021 10:10

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270945	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P402774	
	SM 2320 B-2011	Total Alkalinity	148	A	mg CaCO3/L	P402929	
	SM 2540 D-2011	TSS	7	I	mg/L	P403199	
	SM 4500 F-C-2011	Fluoride	0.43		mg F/L	P402930	
2270946	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P403079	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P403158	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P403008	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P402892	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P403240	
2270947	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.33		mg P/L	P402772	
2271001	EPA 8321B	2,4-D	0.0020	U	ug/L	P402808	
		Acesulfame K	0.10	U	ug/L	P402720	MS
		AMPA	1.0	U	ug/L	P402720	
		2,4,5-T	0.0040	U	ug/L	P402808	
		Acetaminophen	0.0080	U	ug/L	P402808	
		Acetamiprid	0.0020	U	ug/L	P402808	
		Endothall	0.25	U	ug/L	P402720	MS
		Glufosinate	1.0	U	ug/L	P402720	
		Glyphosate	1.0	U	ug/L	P402720	
		Afidopyropen	0.0020	U	ug/L	P402808	
		Sucralose	0.11		ug/L	P402720	
		Bentazon	0.10		ug/L	P402808	
		Benzovindiflupyr	0.0020	U	ug/L	P402808	
		Carbamazepine	8.0E-04	U	ug/L	P402808	
		Clothianidin	0.0020	U	ug/L	P402808	
		Dinotefuran	0.0020	U	ug/L	P402808	
		Diuron	0.0020	U	ug/L	P402808	
		Fenuron	0.016	U	ug/L	P402808	
		Fluridone	8.0E-04	U	ug/L	P402808	
		Imazapyr	0.038		ug/L	P402808	MS
		Hydrocodone	0.0020	U	ug/L	P402808	
		Ibuprofen	0.020	U	ug/L	P402808	
		Imidacloprid	0.0041	I	ug/L	P402808	MS
		Linuron	0.0040	U	ug/L	P402808	
		Mandestrobin	0.0020	U	ug/L	P402808	
		MCP	0.0020	U	ug/L	P402808	
		Naproxen	0.0080	U	ug/L	P402808	
		Primidone	0.0040	U	ug/L	P402808	
		Pyraclostrobin	0.0020	U	ug/L	P402808	
		Thiamethoxam	0.0020	U	ug/L	P402808	
		Tolfenpyrad	0.0020	U	ug/L	P402808	
		Triclopyr	0.0040	U	ug/L	P402808	
2271003	EPA 200.7 Rev. 4.4	Calcium	120		mg/L	P403025	

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2271003	EPA 200.7 Rev. 4.4	Iron	390		ug/L	P403025	
		Magnesium	284		mg/L	P403025	
		Manganese	55.4		ug/L	P403025	
		Zinc	6.1	I	ug/L	P403025	
	EPA 200.8 Rev. 5.4	Aluminum	170	I	ug/L	P403025	
		Antimony	0.20	U	ug/L	P403025	
		Arsenic	1.66		ug/L	P403025	
		Beryllium	0.040	U	ug/L	P403025	
		Cadmium	0.080	U	ug/L	P403025	
		Chromium	1.6	U	ug/L	P403025	
		Copper	1.6	U	ug/L	P403025	
		Lead	0.80	U	ug/L	P403025	
		Nickel	2.0	U	ug/L	P403025	
		Selenium	0.80	U	ug/L	P403025	
		Silver	0.040	U	ug/L	P403025	
		Thallium	0.40	U	ug/L	P403025	

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Egans Creek at N. 14th

Collection Date/Time: 08/19/2021 11:20

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270951	EPA 180.1 Rev. 2.0	Turbidity	9.8		NTU	P402774	
	SM 2320 B-2011	Total Alkalinity	110		mg CaCO3/L	P402929	
	SM 2540 D-2011	TSS	20		mg/L	P403245	
	SM 4500 F-C-2011	Fluoride	0.90		mg F/L	P402930	
2270953	EPA 350.1 Rev. 2.0	Ammonia-N	0.091		mg N/L	P403079	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P403260	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P403008	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P403006	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P403118	
2270955	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P402772	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Egan creek at Atlantic

Collection Date/Time: 08/19/2021 11:45

Field ID: G4NE0285

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270948	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P402774	
	SM 2320 B-2011	Total Alkalinity	126		mg CaCO3/L	P402929	
	SM 2540 D-2011	TSS	24		mg/L	P403245	
	SM 4500 F-C-2011	Fluoride	0.65		mg F/L	P402930	
2270949	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P403079	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P403260	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P403008	
	EPA 365.1 Rev. 2.0	Total-P	0.53		mg P/L	P402892	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P403118	
2270950	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.44		mg P/L	P402772	
2271002	EPA 8321B	2,4-D	0.038		ug/L	P402808	
		Acesulfame K	0.12	I	ug/L	P402720	MS
		AMPA	1.0	U	ug/L	P402720	
		2,4,5-T	0.0040	U	ug/L	P402808	
		Acetaminophen	0.0080	U	ug/L	P402808	
		Acetamiprid	0.0020	U	ug/L	P402808	
		Endothall	0.25	U	ug/L	P402720	MS
		Glufosinate	1.0	U	ug/L	P402720	
		Glyphosate	1.0	U	ug/L	P402720	
		Afidopyropen	0.0020	U	ug/L	P402808	
		Sucralose	0.25		ug/L	P402720	
		Bentazon	0.063		ug/L	P402808	
		Benzovindiflupyr	0.0020	U	ug/L	P402808	
		Carbamazepine	8.0E-04	U	ug/L	P402808	
		Clothianidin	0.0020	U	ug/L	P402808	
		Dinotefuran	0.0020	U	ug/L	P402808	
		Diuron	0.040		ug/L	P402808	
		Fenuron	0.016	U	ug/L	P402808	
		Fluridone	0.011		ug/L	P402808	
		Imazapyr	0.052		ug/L	P402808	MS
		Hydrocodone	0.0020	U	ug/L	P402808	
		Ibuprofen	0.020	U	ug/L	P402808	
		Imidacloprid	0.0036	I	ug/L	P402808	MS
		Linuron	0.0040	U	ug/L	P402808	
		Mandestrobin	0.0020	U	ug/L	P402808	
		MCP	0.0074	I	ug/L	P402808	
		Naproxen	0.0080	U	ug/L	P402808	
		Primidone	0.0040	U	ug/L	P402808	
		Pyraclostrobin	0.0020	U	ug/L	P402808	
		Thiamethoxam	0.0020	U	ug/L	P402808	
		Tolfenpyrad	0.0020	U	ug/L	P402808	
		Triclopyr	0.0040	U	ug/L	P402808	

Field ID: G4NE0285

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Ref. Method and Comment:
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: Egans Creek at Jasmine st.

Collection Date/Time: 08/19/2021 12:15

Field ID: G4NE0305

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270952	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P402774	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P402851	
	SM 2540 D-2011	TSS	10	I	mg/L	P403199	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P402854	
2270954	EPA 350.1 Rev. 2.0	Ammonia-N	0.27		mg N/L	P403081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P403159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.050		mg N/L	P402940	
	EPA 365.1 Rev. 2.0	Total-P	0.75		mg P/L	P402844	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P403372	
2270956	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.63		mg P/L	P402770	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402774

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P403025

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403025

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0
Batch ID: P403079

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403081

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403159

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402940

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403008

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402844

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402892

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402770

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402772

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

Reference Method: EPA 8321B
Batch ID: P402720

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P402720

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P402808

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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
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 2320 B-2011
Batch ID: P402851

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

Reference Method: SM 2320 B-2011
Batch ID: P402929

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

Reference Method: SM 2540 D-2011
Batch ID: P403199

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P403245

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402854

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403118

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P403240

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P403372

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: P403025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	105		P	85 - 115
Magnesium	100		P	85 - 115
Manganese	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	97.5		P	85 - 115
Beryllium	97.3		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	102		P	85 - 115
Copper	101		P	85 - 115
Lead	97.9		P	85 - 115
Nickel	101		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	99.6		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403079

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403081

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403159

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402940

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403008

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402844

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402892

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: P403006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402770

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402772

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

Reference Method: EPA 8321B
Batch ID: P402720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.4		P	40 - 150
AMPA	97.9		P	40 - 160
Endothall	126		P	40 - 150
Glufosinate	104		P	40 - 160
Glyphosate	91.6		P	40 - 160
Sucralose	106		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P402808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.9		P	40 - 150
2,4,5-T	87.1		P	40 - 150
Acetaminophen	75.1		P	30 - 150
Acetamiprid	80.5		P	40 - 150
Afidopyropen	65.6		P	40 - 150
Bentazon	92.0		P	30 - 150
Benzovindiflupyr	78.8		P	40 - 150
Carbamazepine	77.0		P	40 - 150
Clothianidin	74.8		P	40 - 150
Dinotefuran	75.8		P	40 - 150
Diuron	96.1		P	40 - 150
Fenuron	85.3		P	40 - 150
Fluridone	81.8		P	40 - 150
Hydrocodone	77.3		P	40 - 150
Ibuprofen	71.7		P	40 - 150
Imazapyr	91.6		P	40 - 150
Imidacloprid	85.0		P	40 - 150
Linuron	79.4		P	40 - 150
Mandestrobin	77.6		P	40 - 150
MCPP	87.3		P	40 - 150
Naproxen	58.1		P	40 - 150
Primidone	87.9		P	40 - 150
Pyraclostrobin	66.5		P	40 - 150
Thiamethoxam	78.0		P	40 - 150
Tolfenpyrad	35.0		P	30 - 150
Triclopyr	76.0		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P402851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P402929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P402854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P403118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403372

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P403025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271791	Iron	100	98.1	P/P	70 - 130
2271791	Manganese	94.5	93.6	P/P	70 - 130
2271791	Zinc	115	114	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271791	Aluminum	111	108	P/P	70 - 130
2271791	Antimony	104	103	P/P	70 - 130
2271791	Arsenic	110	108	P/P	70 - 130
2271791	Beryllium	103	102	P/P	70 - 130
2271791	Cadmium	94.9	94.1	P/P	70 - 130
2271791	Chromium	104	103	P/P	70 - 130
2271791	Copper	109	108	P/P	70 - 130
2271791	Lead	107	106	P/P	70 - 130
2271791	Nickel	112	110	P/P	70 - 130
2271791	Selenium	104	101	P/P	70 - 130
2271791	Silver	91.9	90.3	P/P	70 - 130
2271791	Thallium	109	110	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270723	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271142	Ammonia-N	94.2	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270825	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270865	Kjeldahl Nitrogen	101	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270527	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270865	NO2NO3-N	99.6	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403008

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270721	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270900	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270836	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270866	O-Phosphate-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270726	O-Phosphate-P	106	106	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P402720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	Acesulfame K	154	134	F/P	40 - 150
2270486	AMPA	83.5	84.6	P/P	40 - 160
2270486	Endothall	155	154	F/F	40 - 150
2270486	Glufosinate	84.2	82.7	P/P	40 - 160
2270486	Glyphosate	81.2	82.2	P/P	40 - 160
2270486	Sucralose	112	110	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	2,4-D	107	104	P/P	40 - 150
2270486	2,4,5-T	100	99.1	P/P	40 - 150
2270486	Acetaminophen	85.7	86.3	P/P	30 - 150
2270486	Acetamiprid	94.1	94.9	P/P	40 - 150
2270486	Afidopyropen	80.2	67.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P402808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	Benzovindiflupyr	80.8	89.7	P/P	40 - 150
2270486	Carbamazepine	89.4	96.8	P/P	40 - 150
2270486	Clothianidin	114	102	P/P	40 - 150
2270486	Dinotefuran	101	108	P/P	40 - 150
2270486	Diuron	78.5	74.7	P/P	40 - 150
2270486	Fenuron	88.6	88.4	P/P	40 - 150
2270486	Fluridone	84.1	85.0	P/P	40 - 150
2270486	Hydrocodone	89.9	88.8	P/P	40 - 150
2270486	Ibuprofen	84.5	70.1	P/P	40 - 150
2270486	Imazapyr	157	133	F/P	40 - 150
2270486	Imidacloprid	142	151	P/F	40 - 150
2270486	Linuron	76.2	85.8	P/P	40 - 150
2270486	Mandestrobin	83.6	84.6	P/P	40 - 150
2270486	MCP	101	104	P/P	40 - 150
2270486	Naproxen	76.5	80.5	P/P	40 - 150
2270486	Primidone	92.5	91.2	P/P	40 - 150
2270486	Pyraclostrobin	77.8	81.9	P/P	40 - 150
2270486	Thiamethoxam	127	127	P/P	40 - 150
2270486	Tolfenpyrad	50.0	55.1	P/P	30 - 150
2270486	Triclopyr	86.8	92.8	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P402854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271140	Fluoride	99.9	100	P/P	92 - 107

Reference Method: SM 4500 F-C-2011

Batch ID: P402930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270945	Fluoride	96.7	98.1	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P403118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272068	Organic Carbon	94.8	96.0	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P403240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270722	Organic Carbon	94.0	97.5	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P403372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2271056	Organic Carbon	97.0	96.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270807	Turbidity	2.36	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P403025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271791	Calcium	0.0501	Spike	P	0 - 20
2271791	Iron	1.90	Spike	P	0 - 20
2271791	Magnesium	1.09	Spike	P	0 - 20
2271791	Manganese	0.935	Spike	P	0 - 20
2271791	Zinc	0.863	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271791	Aluminum	2.98	Spike	P	0 - 20
2271791	Antimony	0.766	Spike	P	0 - 20
2271791	Arsenic	1.44	Spike	P	0 - 20
2271791	Beryllium	1.27	Spike	P	0 - 20
2271791	Cadmium	0.812	Spike	P	0 - 20
2271791	Chromium	0.930	Spike	P	0 - 20
2271791	Copper	0.813	Spike	P	0 - 20
2271791	Lead	0.527	Spike	P	0 - 20
2271791	Nickel	1.26	Spike	P	0 - 20
2271791	Selenium	3.04	Spike	P	0 - 20
2271791	Silver	1.73	Spike	P	0 - 20
2271791	Thallium	0.646	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270723	Ammonia-N	0.181	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271142	Ammonia-N	0.527	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270825	Kjeldahl Nitrogen	0.108	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270865	Kjeldahl Nitrogen	3.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270527	Kjeldahl Nitrogen	0.348	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270865	NO2NO3-N	0.340	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270721	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270900	Total-P	0.886	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270836	Total-P	0.274	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271788	Total-P	2.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270866	O-Phosphate-P	0.967	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270726	O-Phosphate-P	0.283	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P402720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	Acesulfame K	13.1	Spike	P	0 - 30
2270486	AMPA	1.20	Spike	P	0 - 30
2270486	Endothall	0.531	Spike	P	0 - 30
2270486	Glufosinate	1.84	Spike	P	0 - 30
2270486	Glyphosate	1.21	Spike	P	0 - 30
2270486	Sucralose	1.31	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	2,4-D	2.53	Spike	P	0 - 30
2270486	2,4,5-T	1.19	Spike	P	0 - 30
2270486	Acetaminophen	0.572	Spike	P	0 - 30
2270486	Acetamiprid	0.839	Spike	P	0 - 30
2270486	Afidopyropen	17.7	Spike	P	0 - 30
2270486	Bentazon	4.63	Spike	P	0 - 30
2270486	Benzovindiflupyr	10.4	Spike	P	0 - 30
2270486	Carbamazepine	7.90	Spike	P	0 - 30
2270486	Clothianidin	10.7	Spike	P	0 - 30
2270486	Dinotefuran	5.97	Spike	P	0 - 30
2270486	Diuron	4.62	Spike	P	0 - 30
2270486	Fenuron	0.216	Spike	P	0 - 30
2270486	Fluridone	1.02	Spike	P	0 - 30
2270486	Hydrocodone	1.23	Spike	P	0 - 30
2270486	Ibuprofen	18.7	Spike	P	0 - 30
2270486	Imazapyr	11.1	Spike	P	0 - 30
2270486	Imidacloprid	4.03	Spike	P	0 - 30
2270486	Linuron	11.8	Spike	P	0 - 30
2270486	Mandestrobin	1.20	Spike	P	0 - 30
2270486	MCPP	2.30	Spike	P	0 - 30
2270486	Naproxen	5.06	Spike	P	0 - 30
2270486	Primidone	1.46	Spike	P	0 - 30
2270486	Pyraclostrobin	5.05	Spike	P	0 - 30
2270486	Thiamethoxam	0.0550	Spike	P	0 - 30
2270486	Tolfenpyrad	9.75	Spike	P	0 - 30
2270486	Triclopyr	6.74	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P402851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P402851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271140	Total Alkalinity	1.71	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P402929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270945	Total Alkalinity	0.277	Sample	P	0 - 5.2

Reference Method: SM 2540 D-2011
Batch ID: P403245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270818	TSS	6.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P402854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271140	Fluoride	0.472	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P402930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270945	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272068	Organic Carbon	0.830	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P403240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270722	Organic Carbon	1.99	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P403372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271056	Organic Carbon	0.421	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2271001
Field Sample ID: G4NE0287

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	76.7	P	30 - 160
EPA 8321B	Endothall-d6	131	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	122	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.2	P	30 - 160
EPA 8321B	Primidone-d5	66.8	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Lab Sample ID: 2271002
Field Sample ID: G4NE0285

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.9	P	30 - 160
EPA 8321B	Diuron-d6	78.7	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	45.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	56.7	P	30 - 160
EPA 8321B	Primidone-d5	39.5	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107370

Included Lab Sample IDs: 2270947, 2270950, 2270955, 2270956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	102	P/P	90 - 110
O-Phosphate-P	101	99.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107371

Included Lab Sample IDs: 2270945, 2270948, 2270951, 2270952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A107376

Included Lab Sample IDs: 2271001, 2271002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	103	P/P	60 - 160
Glufosinate	99.9	102	P/P	60 - 160
Glyphosate	106	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107377

Included Lab Sample IDs: 2271001, 2271002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.2	83.4	P/P	60 - 160
Endothall	131	140	P/P	60 - 160
Sucralose	103	109	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A107408

Included Lab Sample IDs: 2270952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107408

Included Lab Sample IDs: 2270952

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

Reference Method: SM 2320 B-2011

Run ID: A107452

Included Lab Sample IDs: 2270945, 2270948, 2270951

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A107452

Included Lab Sample IDs: 2270945, 2270948, 2270951

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107455

Included Lab Sample IDs: 2270954

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

Reference Method: EPA 8321B

Run ID: A107460

Included Lab Sample IDs: 2271001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	90.6	P/P	50 - 150
2,4,5-T	99.0	98.2	P/P	50 - 150
Acetaminophen	97.3	95.0	P/P	60 - 160
Acetamiprid	108	96.5	P/P	50 - 150
Afidopyropen	97.6	95.4	P/P	50 - 150
Bentazon	116	112	P/P	50 - 160
Benzovindiflupyr	114	104	P/P	50 - 150
Carbamazepine	107	109	P/P	60 - 150
Clothianidin	84.9	99.2	P/P	60 - 150
Dinotefuran	103	94.8	P/P	50 - 150
Diuron	125	126	P/P	60 - 160
Fenuron	100	100	P/P	60 - 150
Fluridone	107	106	P/P	60 - 160
Hydrocodone	97.0	103	P/P	60 - 150
Ibuprofen	84.7	75.6	P/P	50 - 160
Imazapyr	117	122	P/P	50 - 150
Imidacloprid	99.2	98.7	P/P	60 - 150
Linuron	101	108	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	96.4	96.2	P/P	50 - 150
Naproxen	73.5	128	P/P	50 - 160
Primidone	107	119	P/P	60 - 150
Pyraclostrobin	109	103	P/P	60 - 150
Thiamethoxam	97.8	104	P/P	50 - 150
Tolfenpyrad	101	99.0	P/P	60 - 150
Triclopyr	102	104	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107475

Included Lab Sample IDs: 2270946, 2270949, 2270953

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107480

Included Lab Sample IDs: 2270946, 2270949, 2270954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110
Total-P	103	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A107499

Included Lab Sample IDs: 2271002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	128	96.4	P/P	50 - 150
2,4,5-T	97.6	116	P/P	50 - 150
Acetaminophen	108	113	P/P	60 - 160
Acetamiprid	96.7	108	P/P	50 - 150
Afidopyropen	96.9	120	P/P	50 - 150
Bentazon	111	74.4	P/P	50 - 160
Benzovindiflupyr	99.4	98.1	P/P	50 - 150
Carbamazepine	98.3	106	P/P	60 - 150
Clothianidin	104	117	P/P	60 - 150
Dinotefuran	107	108	P/P	50 - 150
Diuron	101	118	P/P	60 - 160
Fenuron	97.1	103	P/P	60 - 150
Fluridone	102	100	P/P	60 - 160
Hydrocodone	98.8	103	P/P	60 - 150
Ibuprofen	105	90.4	P/P	50 - 160
Imazapyr	96.8	111	P/P	50 - 150
Imidacloprid	94.8	123	P/P	60 - 150
Linuron	84.4	103	P/P	60 - 150
Mandestrobin	106	110	P/P	50 - 150
MCPP	92.6	98.2	P/P	50 - 150
Naproxen	90.6	148	P/P	50 - 160
Primidone	95.0	131	P/P	60 - 150
Pyraclostrobin	103	116	P/P	60 - 150
Thiamethoxam	103	113	P/P	50 - 150
Tolfenpyrad	98.3	105	P/P	60 - 150
Triclopyr	93.5	94.9	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107511

Included Lab Sample IDs: 2270946, 2270949, 2270953, 2270954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	97.7	P/P	90 - 110
Ammonia-N	98.3	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107514

Included Lab Sample IDs: 2270953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107520

Included Lab Sample IDs: 2271003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	107	109	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	97.9	97.1	P/P	90 - 110
Beryllium	99.9	97.2	P/P	90 - 110
Cadmium	101	99.9	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Lead	97.2	96.5	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	98.6	99.6	P/P	90 - 110
Silver	97.2	95.8	P/P	90 - 110
Thallium	101	99.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107529

Included Lab Sample IDs: 2270949, 2270953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	98.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107531

Included Lab Sample IDs: 2271003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.6	101	P/P	90 - 110
Iron	95.7	99.1	P/P	90 - 110
Magnesium	95.8	99.1	P/P	90 - 110
Manganese	99.7	102	P/P	90 - 110
Zinc	99.5	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107566

Included Lab Sample IDs: 2270946, 2270954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	100	P/P	90 - 110
Kjeldahl Nitrogen	95.6	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107593

Included Lab Sample IDs: 2270946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.1	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107619

Included Lab Sample IDs: 2270949, 2270953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107619

Included Lab Sample IDs: 2270949, 2270953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107644

Included Lab Sample IDs: 2270954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.0	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						2.36	
EPA 200.7 Rev. 4.4	Calcium	101						0.0501
	Iron	105		100	98.1			1.90
	Magnesium	100						1.09
	Manganese	101		94.5	93.6			0.935
	Zinc	102		115	114			0.863
EPA 200.8 Rev. 5.4	Aluminum	103		111	108			2.98
	Antimony	104		104	103			0.766
	Arsenic	97.5		110	108			1.44
	Beryllium	97.3		103	102			1.27
	Cadmium	100		94.9	94.1			0.812
	Chromium	102		104	103			0.930
	Copper	101		109	108			0.813
	Lead	97.9		107	106			0.527
	Nickel	101		112	110			1.26
	Selenium	97.6		104	101			3.04
	Silver	99.6		91.9	90.3			1.73
	Thallium	101		109	110			0.646
EPA 350.1 Rev. 2.0	Ammonia-N	98.2		100	100			0.181
	Ammonia-N	97.4		94.2	94.8			0.527
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		102	102			0.108
	Kjeldahl Nitrogen	98.2		101	96.1			3.89
	Kjeldahl Nitrogen	103		101	101			0.348
EPA 353.2 Rev. 2.0	NO2NO3-N	100		99.6	99.0			0.340
	NO2NO3-N	99.5		98.0	98.0			0.0
EPA 365.1 Rev. 2.0	Total-P	106		104	105			0.886
	Total-P	105		103	103			0.274
	Total-P	105						2.46
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	106		103	104			0.967
	O-Phosphate-P	100		106	106			0.283
EPA 8321B	2,4-D	82.9		107	104			2.53
	2,4,5-T	87.1		100	99.1			1.19
	Acesulfame K	87.4		154	134			13.1
	Acetaminophen	75.1		85.7	86.3			0.572
	Acetamiprid	80.5		94.1	94.9			0.839
	Afidopyropen	65.6		80.2	67.1			17.7
	AMPA	97.9		83.5	84.6			1.20
	Bentazon	92.0						4.63
	Benzovindiflupyr	78.8		80.8	89.7			10.4
	Carbamazepine	77.0		89.4	96.8			7.90
	Clothianidin	74.8		114	102			10.7
	Dinotefuran	75.8		101	108			5.97
	Diuron	96.1		78.5	74.7			4.62
	Endothall	126		155	154			0.531
	Fenuron	85.3		88.6	88.4			0.216
	Fluridone	81.8		84.1	85.0			1.02
	Glufosinate	104		84.2	82.7			1.84
	Glyphosate	91.6		81.2	82.2			1.21
	Hydrocodone	77.3		89.9	88.8			1.23
	Ibuprofen	71.7		84.5	70.1			18.7
	Imazapyr	91.6		157	133			11.1
	Imidacloprid	85.0		142	151			4.03
	Linuron	79.4		76.2	85.8			11.8
	Mandestrobin	77.6		83.6	84.6			1.20

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	MCCP	87.3	101	104		2.30
	Naproxen	58.1	76.5	80.5		5.06
	Primidone	87.9	92.5	91.2		1.46
	Pyraclostrobin	66.5	77.8	81.9		5.05
	Sucralose	106	112	110		1.31
	Thiamethoxam	78.0	127	127		0.0550
	Tolfenpyrad	35.0	50.0	55.1		9.75
	Triclopyr	76.0	86.8	92.8		6.74
SM 2320 B-2011	Total Alkalinity	101			1.71	
	Total Alkalinity	101			0.277	
SM 2540 D-2011	TSS				6.90	
SM 4500 F-C-2011	Fluoride	101	99.9	100		0.472
	Fluoride	99.2	96.7	98.1		0.953
SM 5310 B-2011	Organic Carbon	95.6	94.8	96.0		0.830
	Organic Carbon	96.7	94.0	97.5		1.99
	Organic Carbon	96.8	97.0	96.2		0.421

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2270945, 2270948, 2270951, 2270952
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2271003
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2271003
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2270946, 2270949, 2270953, 2270954
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2270946, 2270949, 2270953, 2270954
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2270946, 2270949, 2270953, 2270954
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2270946, 2270949, 2270953, 2270954
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2270947, 2270950, 2270955, 2270956
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2271001, 2271002
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2270945, 2270948, 2270951, 2270952
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2270945, 2270948, 2270951, 2270952
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2270945, 2270948, 2270951, 2270952
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2270946, 2270949, 2270953, 2270954

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	08/20/2021			08/20/2021 16:40	Sarah A Nixon	2270945, 2270948, 2270951, 2270952
EPA 200.7 Rev. 4.4	08/20/2021	08/26/2021 14:45	Elliott D. Healy	08/29/2021 16:48	Josef B Mick	2271003
	08/20/2021	08/26/2021 14:45	Elliott D. Healy	08/29/2021 16:56	Josef B Mick	2271003
EPA 200.8 Rev. 5.4	08/20/2021	08/26/2021 14:45	Elliott D. Healy	08/27/2021 13:32	Alexander Thompson	2271003
	08/20/2021	08/26/2021 14:45	Elliott D. Healy	08/27/2021 15:28	Alexander Thompson	2271003
EPA 350.1 Rev. 2.0	08/20/2021			08/27/2021 13:07	Ping Hua	2270946
	08/20/2021			08/27/2021 13:08	Ping Hua	2270949
	08/20/2021			08/27/2021 13:09	Ping Hua	2270953
	08/20/2021			08/27/2021 13:52	Ping Hua	2270954
EPA 351.2 Rev. 2.0	08/20/2021	08/30/2021 13:46	Benjamin T. Nordmann	08/31/2021 12:09	Alexandra J Mattheus	2270946
	08/20/2021	08/30/2021 13:46	Benjamin T. Nordmann	08/31/2021 12:34	Alexandra J Mattheus	2270954
	08/20/2021	09/01/2021 12:09	Benjamin T. Nordmann	09/02/2021 12:12	Alexandra J Mattheus	2270949
	08/20/2021	09/01/2021 12:09	Benjamin T. Nordmann	09/02/2021 12:14	Alexandra J Mattheus	2270953
EPA 353.2 Rev. 2.0	08/20/2021			08/25/2021 10:05	Beverly Y. Sanders	2270954
	08/20/2021			08/26/2021 09:13	Beverly Y. Sanders	2270946
	08/20/2021			08/26/2021 09:14	Beverly Y. Sanders	2270949
	08/20/2021			08/26/2021 09:15	Beverly Y. Sanders	2270953
EPA 365.1 Rev. 2.0	08/20/2021	08/24/2021 14:32	Simonne.V. Calhoun	08/25/2021 17:33	Shengyu Ding	2270954
	08/20/2021	08/24/2021 14:32	Simonne.V. Calhoun	08/25/2021 18:08	Shengyu Ding	2270946
	08/20/2021	08/24/2021 14:32	Simonne.V. Calhoun	08/25/2021 18:09	Shengyu Ding	2270949
	08/20/2021	08/26/2021 14:30	Simonne.V. Calhoun	08/27/2021 11:11	Shengyu Ding	2270953
EPA 365.1 Rev. 2.0 dissolved	08/20/2021			08/20/2021 15:19	James L Waggeberby	2270956
	08/20/2021			08/20/2021 16:22	James L Waggeberby	2270947
	08/20/2021			08/20/2021 16:25	James L Waggeberby	2270950
	08/20/2021			08/20/2021 16:28	James L Waggeberby	2270955
EPA 8321B	08/20/2021	08/20/2021 13:40	Juyoung Kim	08/20/2021 21:57	Pramila Ghimire	2271001
	08/20/2021	08/20/2021 13:40	Juyoung Kim	08/20/2021 22:11	Pramila Ghimire	2271002
	08/20/2021	08/20/2021 13:40	Juyoung Kim	08/23/2021 13:48	Juyoung Kim	2271001
	08/20/2021	08/20/2021 13:40	Juyoung Kim	08/23/2021 13:58	Juyoung Kim	2271002
	08/20/2021	08/24/2021 09:00	Hoor Shaik	08/25/2021 13:15	Juyoung Kim	2271001
	08/20/2021	08/24/2021 09:00	Hoor Shaik	08/26/2021 18:59	Juyoung Kim	2271002
	08/20/2021	08/24/2021 09:00	Hoor Shaik	08/27/2021 11:57	Juyoung Kim	2271002
SM 2320 B-2011	08/20/2021			08/24/2021 02:14	Sarah A Nixon	2270952
	08/20/2021			08/24/2021 17:12	Dale L. Simmons	2270945
	08/20/2021			08/24/2021 17:26	Dale L. Simmons	2270948
	08/20/2021			08/24/2021 18:41	Dale L. Simmons	2270951
SM 2540 D-2011	08/20/2021			08/23/2021 15:36	Yijie Li	2270945, 2270948, 2270951, 2270952
SM 4500 F-C-2011	08/20/2021			08/24/2021 02:14	Sarah A Nixon	2270952
	08/20/2021			08/24/2021 15:13	Dale L. Simmons	2270945
	08/20/2021			08/24/2021 15:33	Dale L. Simmons	2270948

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	08/20/2021			08/24/2021 16:43	Dale L. Simmons	2270951
SM 5310 B-2011	08/20/2021			08/28/2021 13:51	Madeline Gruver	2270949
	08/20/2021			08/28/2021 14:06	Madeline Gruver	2270953
	08/20/2021			08/31/2021 10:15	Touraj Touran	2270946
	08/20/2021			09/02/2021 23:51	Touraj Touran	2270954