

Chemical Analysis Report

NE-DIST-2020-10-15-01

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

Event Description: **Pellicer Creek and Tribs**

Request ID: **RQ-2020-09-14-18**

Customer: **NE-DIST**

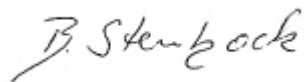
Project ID: **SMP**

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-NOV-2020 11:48



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: Pellicer Creek @ Styles Creek

Collection Date/Time: 10/14/2020 11:05

Field ID: G5NE0592

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202234	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P388741	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P389481	
		Sulfate	1.1E+03		mg SO4/L	P389335	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P388943	
	SM 2540 D-2011	TSS	3	IA	mg/L	P388975	
	SM 4500 F-C-2011	Fluoride	0.54		mg F/L	P388957	
2202235	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P388841	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P389043	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P389071	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P388789	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P388880	
2202252	EPA 8321B	2,4-D	0.039		ug/L	P388705	RPD
		Acesulfame K**	0.10	UJ	ug/L	P388857	SUR
		AMPA**	1.0	U	ug/L	P388857	
		Sucralose**	0.097		ug/L	P388857	
		Acetaminophen**	0.0080	U	ug/L	P388705	
		Acetamiprid**	0.0020	U	ug/L	P388705	
		Endothall**	0.25	UJ	ug/L	P388857	SUR
		Glufosinate**	1.0	U	ug/L	P388857	
		Glyphosate**	1.0	U	ug/L	P388857	
		Afidopyropen**	0.0020	U	ug/L	P388705	MS, RPD
		Bentazon	0.0043		ug/L	P388705	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P388705	
		Carbamazepine**	8.0E-04	U	ug/L	P388705	
		Clothianidin**	0.0020	U	ug/L	P388705	
		Dinotefuran**	0.0020	U	ug/L	P388705	
		Diuron	0.0020	U	ug/L	P388705	MS, RPD
		Fenuron	0.016	U	ug/L	P388705	
		Fluridone**	0.0011	I	ug/L	P388705	
		Imazapyr**	0.067		ug/L	P388705	
		Hydrocodone**	0.0020	U	ug/L	P388705	
		Ibuprofen**	0.020	U	ug/L	P388705	
		Imidacloprid	0.0054	I	ug/L	P388705	
		Linuron	0.0040	U	ug/L	P388705	
		Mandestrobin**	0.0020	U	ug/L	P388705	
		MCPP	0.0020	U	ug/L	P388705	
		Naproxen**	0.0080	U	ug/L	P388705	
		Primidone**	0.0040	U	ug/L	P388705	
		Pyraclostrobin**	0.0020	U	ug/L	P388705	
		Thiamethoxam**	0.0020	U	ug/L	P388705	
		Tolfenpyrad**	0.0020	U	ug/L	P388705	
		Triclopyr**	0.0040	U	ug/L	P388705	MS, RPD
2202254	EPA 200.7 Rev. 4.4	Chromium	8.2	I	ug/L	P388748	
		Iron	750		ug/L	P388748	

Field ID: G5NE0592

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202254	EPA 200.7 Rev. 4.4	Manganese	22		ug/L	P388748	
		Zinc	15	U	ug/L	P388748	
	EPA 200.8 Rev. 5.4	Aluminum	398		ug/L	P388748	
		Antimony	0.20	U	ug/L	P388748	
		Arsenic	2.11		ug/L	P388748	
		Beryllium	0.065	I	ug/L	P388748	
		Cadmium	0.080	U	ug/L	P388748	
		Copper	1.6	U	ug/L	P388748	
		Lead	0.80	U	ug/L	P388748	
		Nickel	2.0	U	ug/L	P388748	
		Selenium	0.80	U	ug/L	P388748	
		Silver	0.040	U	ug/L	P388748	
		Thallium	0.40	U	ug/L	P388748	
		O-Phosphate-P	0.052		mg P/L	P388746	
2202725	EPA 365.1 Rev. 2.0 dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: FB101420

Collection Date/Time: 10/14/2020 11:10

Field ID: FB101420

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202239	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P388741	
	EPA 300.0 Rev. 2.1	Bromide	0.013	U	mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	2	U	mg/L	P388973	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P388956	
2202240	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P388844	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P389044	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388886	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P388790	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P388946	
2202241	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388745	
2202253	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P388857	
		2,4-D	0.0020	U	ug/L	P388705	RPD
		AMPA**	0.10	U	ug/L	P388857	
		Sucralose**	0.010	U	ug/L	P388857	
		Acetaminophen**	0.0080	U	ug/L	P388705	
		Acetamiprid**	0.0020	U	ug/L	P388705	
		Endothall**	0.25	U	ug/L	P388857	
		Glufosinate**	0.10	U	ug/L	P388857	
		Glyphosate**	0.10	U	ug/L	P388857	
		Afidopyropen**	0.0020	U	ug/L	P388705	MS, RPD
		Bentazon	8.0E-04	U	ug/L	P388705	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P388705	
		Carbamazepine**	8.0E-04	U	ug/L	P388705	
		Clothianidin**	0.0020	U	ug/L	P388705	
		Dinotefuran**	0.0020	U	ug/L	P388705	
		Diuron	0.0020	U	ug/L	P388705	MS, RPD
		Fenuron	0.016	U	ug/L	P388705	
		Fluridone**	8.0E-04	U	ug/L	P388705	
		Imazapyr**	0.0040	U	ug/L	P388705	
		Hydrocodone**	0.0020	U	ug/L	P388705	
		Ibuprofen**	0.020	U	ug/L	P388705	
		Imidacloprid	0.0020	U	ug/L	P388705	
		Linuron	0.0040	U	ug/L	P388705	
		Mandestrobin**	0.0020	U	ug/L	P388705	
		MCPP	0.0020	U	ug/L	P388705	
		Naproxen**	0.0080	U	ug/L	P388705	
		Primidone**	0.0040	U	ug/L	P388705	
		Pyraclostrobin**	0.0020	U	ug/L	P388705	
		Thiamethoxam**	0.0020	U	ug/L	P388705	
		Tolfenpyrad**	0.0020	U	ug/L	P388705	
		Triclopyr**	0.0040	U	ug/L	P388705	MS, RPD
2202255	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P388748	

Field ID: FB101420

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202255	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P388748	
		Chromium	1.0	U	ug/L	P388748	
		Iron	30	U	ug/L	P388748	
		Magnesium	0.040	U	mg/L	P388748	
		Potassium	0.30	U	mg/L	P388748	
		Sodium	0.50	U	mg/L	P388748	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P388748	
		Aluminum	5.0	U	ug/L	P388748	
		Antimony	0.050	U	ug/L	P388748	
		Arsenic	0.050	U	ug/L	P388748	
		Beryllium	0.010	U	ug/L	P388748	
		Boron**	2.0	U	ug/L	P388748	
		Cadmium	0.020	U	ug/L	P388748	
		Copper	0.40	U	ug/L	P388748	
		Lead	0.20	U	ug/L	P388748	
		Nickel	0.50	U	ug/L	P388748	
		Selenium	0.20	U	ug/L	P388748	
		Silver	0.010	U	ug/L	P388748	
		Thallium	0.10	U	ug/L	P388748	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Pellicer 1.3 Mi Downstream of I95

Collection Date/Time: 10/14/2020 11:40

Field ID: G5NE0593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202236	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P388741	
	EPA 300.0 Rev. 2.1	Bromide	0.14		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	2	U	mg/L	P388973	
	SM 4500 F-C-2011	Fluoride	0.044	I	mg F/L	P388956	
2202237	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P388844	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P389042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388886	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P388790	
	SM 5310 B-2011	Organic Carbon	53		mg C/L	P388946	
2202238	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P388745	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: P388741

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388748

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/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: P388748

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
Boron	2.0	U	ug/L
Cadmium	0.020	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: P389335

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389044

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388745

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

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

Reference Method: EPA 8321B
Batch ID: P388705

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
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: EPA 8321B
Batch ID: P388857

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: SM 2320 B-2011
Batch ID: P388942

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P388943

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

Reference Method: SM 2540 D-2011
Batch ID: P388973

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388975

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388880

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

Reference Method: SM 5310 B-2011
Batch ID: P388946

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: P388748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	103		P	85 - 115
Calcium	105		P	85 - 115
Chromium	99.8		P	85 - 115
Iron	107		P	85 - 115
Magnesium	103		P	85 - 115
Manganese	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	99.8		P	85 - 115
Beryllium	95.0		P	85 - 115
Boron	104		P	85 - 115
Cadmium	102		P	85 - 115
Copper	96.6		P	85 - 115
Lead	96.3		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	97.0		P	85 - 115
Silver	97.2		P	85 - 115
Thallium	99.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389335

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

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: P389044

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

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: P389071

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P388705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	99.2		P	30 - 160
Acetaminophen	80.4		P	30 - 160
Acetamiprid	68.8		P	30 - 160
Afidopyropen	30.5		P	30 - 160
Bentazon	45.8		P	30 - 160
Benzovindiflupyr	63.9		P	30 - 160
Carbamazepine	49.6		P	30 - 160
Clothianidin	63.9		P	30 - 160
Dinotefuran	74.9		P	30 - 160
Diuron	37.2		P	30 - 160
Fenuron	89.8		P	30 - 160
Fluridone	65.1		P	30 - 160
Hydrocodone	92.8		P	30 - 160
Ibuprofen	60.4		P	30 - 160
Imazapyr	90.9		P	30 - 160
Imidacloprid	87.8		P	30 - 160
Linuron	42.7		P	30 - 160
Mandestrobin	67.3		P	30 - 160
MCPP	61.3		P	30 - 160
Naproxen	51.6		P	30 - 160
Primidone	70.3		P	30 - 160
Pyraclostrobin	58.5		P	30 - 160
Thiamethoxam	89.3		P	30 - 160
Tolfenpyrad	40.9		P	30 - 160
Triclopyr	55.6		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P388857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	69.4		P	40 - 150
AMPA	114		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	104		P	40 - 140
Sucralose	116		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P388942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P388943

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P388946

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200182	Barium	98.6	97.1	P/P	70 - 130
2200182	Chromium	94.7	93.7	P/P	70 - 130
2200182	Iron	105	104	P/P	70 - 130
2200182	Manganese	100	98.0	P/P	70 - 130
2200182	Zinc	97.1	96.9	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200182	Aluminum	108	107	P/P	70 - 130
2200182	Antimony	107	107	P/P	70 - 130
2200182	Arsenic	113	114	P/P	70 - 130
2200182	Beryllium	109	110	P/P	70 - 130
2200182	Cadmium	103	104	P/P	70 - 130
2200182	Copper	112	111	P/P	70 - 130
2200182	Lead	101	100	P/P	70 - 130
2200182	Nickel	107	106	P/P	70 - 130
2200182	Selenium	113	113	P/P	70 - 130
2200182	Silver	91.4	90.6	P/P	70 - 130
2200182	Thallium	105	104	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201843	Sulfate	102		P	90 - 110
2202392	Sulfate	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202118	Bromide	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202272	Ammonia-N	96.1	97.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202309	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202272	Kjeldahl Nitrogen	109	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202400	Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201833	NO2NO3-N	96.5	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202273	NO2NO3-N	95.8	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202076	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202005	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202128	O-Phosphate-P	97.5	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202274	O-Phosphate-P	99.5	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P388705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201953	2,4-D	60.7	85.5	P/P	30 - 160
2201953	Acetaminophen	91.1	96.9	P/P	30 - 160
2201953	Acetamiprid	67.6	74.3	P/P	30 - 160
2201953	Afidopyropen	22.4	30.5	F/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P388705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201953	Bentazon	25.0	36.1	F/P	30 - 160
2201953	Benzovindiflupyr	52.9	63.2	P/P	30 - 160
2201953	Carbamazepine	38.9	50.0	P/P	30 - 160
2201953	Clothianidin	52.6	65.8	P/P	30 - 160
2201953	Dinotefuran	75.6	90.6	P/P	30 - 160
2201953	Diuron	26.4	36.4	F/P	30 - 160
2201953	Fenuron	76.0	83.3	P/P	30 - 160
2201953	Fluridone	59.9	66.2	P/P	30 - 160
2201953	Hydrocodone	70.5	90.5	P/P	30 - 160
2201953	Ibuprofen	57.1	65.6	P/P	30 - 160
2201953	Imazapyr	75.7	75.5	P/P	30 - 160
2201953	Imidacloprid	103	107	P/P	30 - 160
2201953	Linuron	40.6	45.3	P/P	30 - 160
2201953	Mandestrobin	65.0	74.6	P/P	30 - 160
2201953	MCCP	48.3	65.3	P/P	30 - 160
2201953	Naproxen	36.3	32.2	P/P	30 - 160
2201953	Primidone	64.3	71.1	P/P	30 - 160
2201953	Pyraclostrobin	53.0	57.8	P/P	30 - 160
2201953	Thiamethoxam	85.2	112	P/P	30 - 160
2201953	Tolfenpyrad	32.2	38.4	P/P	30 - 160
2201953	Triclopyr	28.8	54.2	F/P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P388857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202760	Acesulfame K	89.4	90.0	P/P	40 - 150
2202760	AMPA	120	122	P/P	40 - 150
2202760	Endothall	108	109	P/P	40 - 150
2202760	Glufosinate	97.4	92.7	P/P	40 - 150
2202760	Glyphosate	85.1	86.0	P/P	40 - 140
2202760	Sucralose	122	119	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
 Batch ID: P388956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202126	Fluoride	103	104	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
 Batch ID: P388957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201372	Fluoride	101	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
 Batch ID: P388880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201809	Organic Carbon	92.6	92.5	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P388946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202003	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202234	Turbidity	0.498	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200182	Barium	1.44	Spike	P	0 - 20
2200182	Calcium	1.31	Spike	P	0 - 20
2200182	Chromium	0.978	Spike	P	0 - 20
2200182	Iron	0.817	Spike	P	0 - 20
2200182	Magnesium	0.774	Spike	P	0 - 20
2200182	Manganese	1.62	Spike	P	0 - 20
2200182	Potassium	0.165	Spike	P	0 - 20
2200182	Sodium	0.0229	Spike	P	0 - 20
2200182	Zinc	0.282	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200182	Aluminum	0.966	Spike	P	0 - 20
2200182	Antimony	0.0146	Spike	P	0 - 20
2200182	Arsenic	0.994	Spike	P	0 - 20
2200182	Beryllium	0.778	Spike	P	0 - 20
2200182	Boron	0.167	Spike	P	0 - 20
2200182	Cadmium	0.511	Spike	P	0 - 20
2200182	Copper	1.03	Spike	P	0 - 20
2200182	Lead	0.884	Spike	P	0 - 20
2200182	Nickel	0.663	Spike	P	0 - 20
2200182	Selenium	0.222	Spike	P	0 - 20
2200182	Silver	0.906	Spike	P	0 - 20
2200182	Thallium	0.347	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201843	Sulfate	0.477	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202272	Ammonia-N	0.908	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202309	Ammonia-N	0.0671	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202272	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202400	Kjeldahl Nitrogen	0.658	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201833	NO2NO3-N	0.517	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202273	NO2NO3-N	0.497	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202076	Total-P	0.827	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202005	Total-P	0.492	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202128	O-Phosphate-P	0.637	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202274	O-Phosphate-P	0.605	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P388705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201953	2,4-D	30.9	Spike	F	0 - 30
2201953	Acetaminophen	6.09	Spike	P	0 - 30
2201953	Acetamiprid	9.32	Spike	P	0 - 30
2201953	Afidopyropen	30.6	Spike	F	0 - 30
2201953	Bentazon	15.7	Spike	P	0 - 30
2201953	Benzovindiflupyr	17.7	Spike	P	0 - 30
2201953	Carbamazepine	24.9	Spike	P	0 - 30
2201953	Clothianidin	22.3	Spike	P	0 - 30
2201953	Dinotefuran	18.1	Spike	P	0 - 30
2201953	Diuron	32.0	Spike	F	0 - 30
2201953	Fenuron	9.21	Spike	P	0 - 30
2201953	Fluridone	8.95	Spike	P	0 - 30
2201953	Hydrocodone	24.8	Spike	P	0 - 30
2201953	Ibuprofen	13.8	Spike	P	0 - 30
2201953	Imazapyr	0.194	Spike	P	0 - 30
2201953	Imidacloprid	3.33	Spike	P	0 - 30
2201953	Linuron	10.8	Spike	P	0 - 30
2201953	Mandestrobin	13.7	Spike	P	0 - 30
2201953	MCPP	29.9	Spike	P	0 - 30
2201953	Naproxen	12.0	Spike	P	0 - 30
2201953	Primidone	10.0	Spike	P	0 - 30
2201953	Pyraclostrobin	8.72	Spike	P	0 - 30
2201953	Thiamethoxam	27.0	Spike	P	0 - 30
2201953	Tolfenpyrad	17.7	Spike	P	0 - 30
2201953	Triclopyr	61.2	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P388857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202760	Acesulfame K	0.707	Spike	P	0 - 30
2202760	AMPA	0.939	Spike	P	0 - 30
2202760	Endothall	0.924	Spike	P	0 - 30
2202760	Glufosinate	4.95	Spike	P	0 - 30
2202760	Glyphosate	1.02	Spike	P	0 - 30
2202760	Sucralose	2.67	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P388942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Total Alkalinity	7.08	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
 Batch ID: P388943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201372	Total Alkalinity	0.245	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P388956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Fluoride	0.479	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
 Batch ID: P388957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201372	Fluoride	0.477	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P388880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201809	Organic Carbon	0.150	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P388946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202003	Organic Carbon	0.0998	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2202252
Field Sample ID: G5NE0592

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.0	P	30 - 160
EPA 8321B	Diuron-d6	41.0	P	30 - 160
EPA 8321B	Endothall-d6	433	F	30 - 160
EPA 8321B	Endothall-d6	433	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.4	P	30 - 160
EPA 8321B	Primidone-d5	60.5	P	30 - 160
EPA 8321B	Sucralose-d6	43.7	P	30 - 160
EPA 8321B	Sucralose-d6	43.7	P	30 - 160

Lab Sample ID: 2202253
Field Sample ID: FB101420

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.0	P	30 - 160
EPA 8321B	Diuron-d6	51.0	P	30 - 160
EPA 8321B	Endothall-d6	115	P	30 - 160
EPA 8321B	Endothall-d6	115	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	124	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	124	P	30 - 160
EPA 8321B	Ibuprofen-d3	56.7	P	30 - 160
EPA 8321B	Primidone-d5	71.6	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101544

Included Lab Sample IDs: 2202234, 2202236, 2202239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101545

Included Lab Sample IDs: 2202238, 2202241, 2202725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.2	P/P	90 - 110
O-Phosphate-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101572

Included Lab Sample IDs: 2202235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101575

Included Lab Sample IDs: 2202237, 2202240

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

Reference Method: SM 5310 B-2011

Run ID: A101587

Included Lab Sample IDs: 2202235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	90.9	93.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101590

Included Lab Sample IDs: 2202237, 2202240

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101602

Included Lab Sample IDs: 2202237

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101610

Included Lab Sample IDs: 2202254, 2202255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	98.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101610

Included Lab Sample IDs: 2202254, 2202255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Chromium	96.5	97.3	P/P	90 - 110
Chromium	97.3	99.1	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Potassium	99.3	101	P/P	90 - 110
Sodium	99.9	101	P/P	90 - 110
Zinc	98.4	99.4	P/P	90 - 110
Zinc	99.4	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101618

Included Lab Sample IDs: 2202252, 2202253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.1	69.4	P/P	50 - 160
Endothall	111	123	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A101630

Included Lab Sample IDs: 2202234, 2202236, 2202239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	98.9	P/P	90 - 110
Total Alkalinity	99.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101630

Included Lab Sample IDs: 2202234, 2202236, 2202239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101631

Included Lab Sample IDs: 2202237, 2202240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101633

Included Lab Sample IDs: 2202235, 2202240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	92.2	92.5	P/P	90 - 110
Total-P	92.5	93.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A101643

Included Lab Sample IDs: 2202252, 2202253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	117	113	P/P	50 - 160
AMPA	117	110	P/P	50 - 160
Glufosinate	105	108	P/P	50 - 160
Glufosinate	111	98.7	P/P	50 - 160
Glyphosate	102	106	P/P	50 - 160
Glyphosate	105	104	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A101652

Included Lab Sample IDs: 2202252, 2202253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	125	94.5	P/P	50 - 150
Acetaminophen	114	113	P/P	60 - 160
Acetamiprid	109	116	P/P	50 - 150
Afidopyropen	93.0	78.2	P/P	50 - 150
Bentazon	130	106	P/P	50 - 160
Benzovindiflupyr	108	92.8	P/P	50 - 150
Carbamazepine	113	97.6	P/P	60 - 150
Clothianidin	96.2	88.4	P/P	60 - 150
Dinotefuran	104	95.5	P/P	50 - 150
Diuron	119	108	P/P	60 - 160
Fenuron	104	104	P/P	60 - 150
Fluridone	94.3	96.0	P/P	60 - 160
Hydrocodone	114	112	P/P	60 - 150
Ibuprofen	123	88.0	P/P	50 - 160
Imazapyr	94.8	78.7	P/P	50 - 160
Imidacloprid	95.7	97.9	P/P	60 - 150
Linuron	85.9	78.6	P/P	60 - 150
Mandestrobin	111	101	P/P	50 - 150
MCPP	98.7	92.3	P/P	50 - 150
Naproxen	81.6	64.1	P/P	50 - 160
Primidone	99.2	90.0	P/P	60 - 150
Pyraclostrobin	106	97.9	P/P	60 - 150
Thiamethoxam	108	112	P/P	50 - 150
Tolfenpyrad	95.8	90.9	P/P	60 - 150
Triclopyr	115	95.0	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101675

Included Lab Sample IDs: 2202235

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

Reference Method: EPA 8321B

Run ID: A101686

Included Lab Sample IDs: 2202252, 2202253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	120	114	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101691

Included Lab Sample IDs: 2202240

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101732

Included Lab Sample IDs: 2202235, 2202237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110
Kjeldahl Nitrogen	99.6	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101737

Included Lab Sample IDs: 2202254, 2202255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	99.4	P/P	90 - 110
Aluminum	97.1	100	P/P	90 - 110
Antimony	97.5	97.7	P/P	90 - 110
Antimony	97.7	98.0	P/P	90 - 110
Arsenic	95.9	97.5	P/P	90 - 110
Arsenic	97.5	97.2	P/P	90 - 110
Beryllium	99.4	97.2	P/P	90 - 110
Beryllium	99.7	99.4	P/P	90 - 110
Boron	101	105	P/P	90 - 110
Cadmium	98.2	97.6	P/P	90 - 110
Cadmium	98.3	98.2	P/P	90 - 110
Copper	95.7	97.2	P/P	90 - 110
Copper	97.2	99.4	P/P	90 - 110
Lead	95.5	95.9	P/P	90 - 110
Lead	95.9	95.9	P/P	90 - 110
Nickel	94.9	97.5	P/P	90 - 110
Nickel	97.5	99.1	P/P	90 - 110
Selenium	96.6	97.6	P/P	90 - 110
Selenium	97.6	96.3	P/P	90 - 110
Silver	99.0	98.9	P/P	90 - 110
Silver	99.1	99.0	P/P	90 - 110
Thallium	93.6	94.0	P/P	90 - 110
Thallium	93.6	93.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101798

Included Lab Sample IDs: 2202234

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101855

Included Lab Sample IDs: 2202234, 2202236, 2202239

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101855

Included Lab Sample IDs: 2202234, 2202236, 2202239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	91.6	97.1	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						0.498	
EPA 200.7 Rev. 4.4	Barium	103		98.6	97.1			1.44
	Calcium	105						1.31
	Chromium	99.8		94.7	93.7			0.978
	Iron	107		105	104			0.817
	Magnesium	103						0.774
	Manganese	104		100	98.0			1.62
	Potassium	101						0.165
	Sodium	101						0.0229
	Zinc	99.6		97.1	96.9			0.282
EPA 200.8 Rev. 5.4	Aluminum	101		108	107			0.966
	Antimony	102		107	107			0.0146
	Arsenic	99.8		113	114			0.994
	Beryllium	95.0		109	110			0.778
	Boron	104						0.167
	Cadmium	102		103	104			0.511
	Copper	96.6		112	111			1.03
	Lead	96.3		101	100			0.884
	Nickel	98.0		107	106			0.663
	Selenium	97.0		113	113			0.222
	Silver	97.2		91.4	90.6			0.906
	Thallium	99.7		105	104			0.347
EPA 300.0 Rev. 2.1	Bromide	103		94.3				
	Sulfate	102		102	104		0.477	
EPA 350.1 Rev. 2.0	Ammonia-N	101		96.1	97.3			0.908
	Ammonia-N	99.9		101	101			0.0671
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		100	103			1.75
	Kjeldahl Nitrogen	103		109	107			2.19
	Kjeldahl Nitrogen	105		106	107			0.658
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		96.5	97.0			0.517
	NO ₂ NO ₃ -N	99.0		95.8	96.2			0.497
EPA 365.1 Rev. 2.0	Total-P	110		107	106			0.827
	Total-P	110		107	108			0.492
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7		97.5	98.2			0.637
	O-Phosphate-P	98.6		99.5	98.9			0.605
EPA 8321B	2,4-D	99.2		60.7	85.5			30.9
	Acesulfame K	69.4		89.4	90.0			0.707
	Acetaminophen	80.4		91.1	96.9			6.09
	Acetamiprid	68.8		67.6	74.3			9.32
	Afidopyrophen	30.5		22.4	30.5			30.6
	AMPA	114		120	122			0.939
	Bentazon	45.8		25.0	36.1			15.7
	Benzovindiflupyr	63.9		52.9	63.2			17.7
	Carbamazepine	49.6		38.9	50.0			24.9
	Clothianidin	63.9		52.6	65.8			22.3
	Dinotefuran	74.9		75.6	90.6			18.1
	Diuron	37.2		26.4	36.4			32.0
	Endothall	109		108	109			0.924
	Fenuron	89.8		76.0	83.3			9.21
	Fluridone	65.1		59.9	66.2			8.95
	Glufosinate	100		97.4	92.7			4.95
	Glyphosate	104		85.1	86.0			1.02
	Hydrocodone	92.8		70.5	90.5			24.8
	Ibuprofen	60.4		57.1	65.6			13.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Imazapyr	90.9	75.7	75.5		0.194
	Imidacloprid	87.8	103	107		3.33
	Linuron	42.7	40.6	45.3		10.8
	Mandestrobin	67.3	65.0	74.6		13.7
	MCP	61.3	48.3	65.3		29.9
	Naproxen	51.6	36.3	32.2		12.0
	Primidone	70.3	64.3	71.1		10.0
	Pyraclostrobin	58.5	53.0	57.8		8.72
	Sucralose	116	122	119		2.67
	Thiamethoxam	89.3	85.2	112		27.0
	Tolfenpyrad	40.9	32.2	38.4		17.7
	Triclopyr	55.6	28.8	54.2		61.2
SM 2320 B-2011	Total Alkalinity	99.4			7.08	
	Total Alkalinity	101			0.245	
SM 4500 F-C-2011	Fluoride	96.1	103	104		0.479
	Fluoride	97.0	101	101		0.477
SM 5310 B-2011	Organic Carbon	93.4	92.6	92.5		0.150
	Organic Carbon	95.6	101			0.0998

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2202234, 2202236, 2202239
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2202254, 2202255
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2202254, 2202255
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2202234, 2202236, 2202239
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2202234
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2202235, 2202237, 2202240
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2202235, 2202237, 2202240
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2202235, 2202237, 2202240
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2202235, 2202237, 2202240
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2202238, 2202241, 2202725
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2202252, 2202253
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2202252, 2202253
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2202234, 2202236, 2202239
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2202234, 2202236, 2202239
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2202234, 2202236, 2202239
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2202235, 2202237, 2202240

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	10/15/2020			10/15/2020 15:36	Yen Ta	2202234, 2202236, 2202239
EPA 200.7 Rev. 4.4	10/15/2020	10/15/2020 16:40	Elliott D. Healy	10/19/2020 18:03	Betina Topolski	2202255
	10/15/2020	10/15/2020 16:40	Elliott D. Healy	10/19/2020 20:06	Betina Topolski	2202254
EPA 200.8 Rev. 5.4	10/15/2020	10/15/2020 16:40	Elliott D. Healy	10/23/2020 15:41	Alexander Thompson	2202255
	10/15/2020	10/15/2020 16:40	Elliott D. Healy	10/23/2020 17:05	Alexander Thompson	2202254
EPA 300.0 Rev. 2.1	10/15/2020			10/27/2020 06:31	Lipi Saha	2202234
	10/15/2020			10/28/2020 22:29	Lipi Saha	2202234
	10/15/2020			10/28/2020 22:47	Lipi Saha	2202236
	10/15/2020			10/28/2020 23:06	Lipi Saha	2202239
EPA 350.1 Rev. 2.0	10/15/2020			10/17/2020 15:41	Ping Hua	2202235
	10/15/2020			10/18/2020 11:28	Ping Hua	2202237
	10/15/2020			10/18/2020 11:37	Ping Hua	2202240
EPA 351.2 Rev. 2.0	10/15/2020	10/21/2020 13:53	David Boose	10/23/2020 15:11	Elliott Rodriguez	2202237
	10/15/2020	10/21/2020 13:53	David Boose	10/23/2020 15:26	Elliott Rodriguez	2202235
	10/15/2020	10/21/2020 13:55	David Boose	10/22/2020 13:13	Elliott Rodriguez	2202240
EPA 353.2 Rev. 2.0	10/15/2020			10/19/2020 11:15	Beverly Y. Sanders	2202237
	10/15/2020			10/19/2020 11:16	Beverly Y. Sanders	2202240
	10/15/2020			10/22/2020 09:00	Beverly Y. Sanders	2202235
EPA 365.1 Rev. 2.0	10/15/2020	10/16/2020 14:57	Yen Ta	10/19/2020 15:06	Lipi Saha	2202237
	10/15/2020	10/16/2020 14:57	Yen Ta	10/20/2020 11:51	Shengyu Wang	2202235
	10/15/2020	10/16/2020 14:57	Yen Ta	10/20/2020 12:04	Shengyu Wang	2202240
EPA 365.1 Rev. 2.0 dissolved	10/15/2020			10/15/2020 15:35	Virginia P. Brown	2202238
	10/15/2020			10/15/2020 15:36	Virginia P. Brown	2202241
	10/15/2020			10/15/2020 16:01	Virginia P. Brown	2202725
EPA 8321B	10/15/2020	10/19/2020 09:00	Hoor Shaik	10/20/2020 11:25	Juyoung Kim	2202252
	10/15/2020	10/19/2020 09:00	Hoor Shaik	10/20/2020 11:59	Juyoung Kim	2202253
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/19/2020 12:48	Rebecca Ware	2202252
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/19/2020 13:02	Rebecca Ware	2202253
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/20/2020 11:45	Rebecca Ware	2202253
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/20/2020 14:10	Rebecca Ware	2202252
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/22/2020 02:16	Rebecca Ware	2202252
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/22/2020 02:27	Rebecca Ware	2202253
SM 2320 B-2011	10/15/2020			10/20/2020 03:28	Samantha Davila	2202236
	10/15/2020			10/20/2020 03:37	Samantha Davila	2202239
	10/15/2020			10/20/2020 11:25	Samantha Davila	2202234
SM 2540 D-2011	10/15/2020			10/16/2020 20:07	Madeline Gruver	2202234, 2202236, 2202239
SM 4500 F-C-2011	10/15/2020			10/20/2020 03:28	Samantha Davila	2202236
	10/15/2020			10/20/2020 03:37	Samantha Davila	2202239
	10/15/2020			10/20/2020 08:50	Samantha Davila	2202234
SM 5310 B-2011	10/15/2020			10/17/2020 07:59	Lauren Lees	2202235

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	10/15/2020			10/19/2020 19:47	Lauren Lees	2202237
	10/15/2020			10/19/2020 19:59	Lauren Lees	2202240