

Chemical Analysis Report

NW-DIST-2020-07-21-01

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

Event Description: **Eglin Run West**
Request ID: **RQ-2020-07-20-54**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
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Pensacola, FL 32502-5794
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Certified by: Colin Wright, Program Administrator

Date Certified: 07-AUG-2020 10:40

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over 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: Juniper Creek upstream of Eglin Rd 221

Collection Date/Time: 07/20/2020 11:43

Field ID: G3NW0170

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2184293	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P384971	
	EPA 300.0 Rev. 2.1	Chloride	2.4		mg Cl/L	P385200	
		Sulfate	0.68		mg SO4/L	P385204	
	SM 2120 B-2011	Color (true)	8.3		PCU	P384962	
	SM 2320 B-2011	Total Alkalinity	1.4	I	mg CaCO3/L	P385067	
	SM 2540 C-2011	TDS	15	U	mg/L	P385460	
	SM 2540 D-2011	TSS	2	I	mg/L	P385466	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385069	
2184294	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P385140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P385054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P384988	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P385230	
	SM 5310 B-2011	Organic Carbon	0.66	I	mg C/L	P385191	
2184295	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384958	

Ref. Method and Comment:

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

Sample Location: Juniper Creek above Hwy 85

Collection Date/Time: 07/20/2020 12:25

Field ID: G3NW0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2184290	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P384971	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P385200	
		Sulfate	0.66		mg SO4/L	P385204	
		Color (true)	20		PCU	P384962	
	SM 2120 B-2011	Total Alkalinity	1.1	I	mg CaCO3/L	P385064	
	SM 2540 C-2011	TDS	15	U	mg/L	P385460	
	SM 2540 D-2011	TSS	2	I	mg/L	P385466	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385065	
2184291	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P385140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P385054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P384988	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P385230	
	SM 5310 B-2011	Organic Carbon	1.6		mg C/L	P385191	
2184292	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384958	
2184315	EPA 200.7 Rev. 4.4	Barium	7.6		ug/L	P384950	
		Calcium	0.35		mg/L	P384950	
		Iron	71	I	ug/L	P384950	
		Magnesium	0.33		mg/L	P384950	
		Potassium	0.30	U	mg/L	P384950	
		Sodium	1.7	I	mg/L	P384950	
		Zinc	5.0	U	ug/L	P384950	
	EPA 200.8 Rev. 5.4	Aluminum	80		ug/L	P384950	
		Antimony	0.050	U	ug/L	P384950	
		Arsenic	0.050	U	ug/L	P384950	
		Boron**	7.2	I	ug/L	P384950	
		Cadmium	0.020	U	ug/L	P384950	
		Chromium	0.40	U	ug/L	P384950	
		Copper	0.40	U	ug/L	P384950	
		Lead	0.20	U	ug/L	P384950	
		Nickel	0.50	U	ug/L	P384950	
		Selenium	0.20	U	ug/L	P384950	
		Silver	0.010	U	ug/L	P384950	
		Thallium	0.10	U	ug/L	P384950	

Ref. Method and Comment:

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

Sample Location: Shaw Still Branch upstream E College Blvd

Collection Date/Time: 07/20/2020 12:50

Field ID: G3NW0162

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2184287	EPA 180.1 Rev. 2.0	Turbidity	0.25		NTU	P384971	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P385200	
		Sulfate	16		mg SO4/L	P385204	
	SM 2120 B-2011	Color (true)	10		PCU	P384962	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P385064	
	SM 2540 C-2011	TDS	110	A	mg/L	P385460	
	SM 2540 D-2011	TSS	3	IA	mg/L	P385466	
2184288	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385065	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P385140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P385054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.0		mg N/L	P384988	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P385230	
2184289	SM 5310 B-2011	Organic Carbon	2.1		mg C/L	P385191	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384957	
2184314	EPA 8321B	2,4-D	0.0020	U	ug/L	P384835	
		Acesulfame K**	0.10	U	ug/L	P384932	
		AMPA**	0.10	U	ug/L	P384932	
		Sucralose**	3.7		ug/L	P384932	
		Acetaminophen**	0.0080	U	ug/L	P384835	
		Acetamiprid**	0.0020	U	ug/L	P384835	
		Endothall**	0.25	U	ug/L	P384932	
		Glufosinate**	0.10	U	ug/L	P384932	
		Glyphosate**	0.10	U	ug/L	P384932	
		Afidopyropen**	0.0020	U	ug/L	P384835	
		Bentazon	8.0E-04	U	ug/L	P384835	
		Benzovindiflupyr**	0.0020	U	ug/L	P384835	
		Carbamazepine**	8.0E-04	U	ug/L	P384835	
		Clothianidin**	0.0020	U	ug/L	P384835	
		Dinotefuran**	0.0048	I	ug/L	P384835	
		Diuron	0.0020	U	ug/L	P384835	
		Fenuron	0.12		ug/L	P384835	
		Fluridone**	8.0E-04	U	ug/L	P384835	
		Imazapyr**	0.0040	U	ug/L	P384835	
		Hydrocodone**	0.0020	U	ug/L	P384835	
		Ibuprofen**	0.020	U	ug/L	P384835	
		Imidacloprid	0.0020	U	ug/L	P384835	
		Linuron	0.0040	U	ug/L	P384835	
		Mandestrobin**	0.0020	U	ug/L	P384835	
		MCP	0.0020	U	ug/L	P384835	
		Naproxen**	0.0080	U	ug/L	P384835	
		Primidone**	0.0041	I	ug/L	P384835	
		Pyraclostrobin**	0.0020	U	ug/L	P384835	
		Thiamethoxam**	0.0020	U	ug/L	P384835	

Field ID: G3NW0162

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2184314	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P384835	
		Triclopyr**	0.0040	U	ug/L	P384835	

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 some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Eagle Creek upstream of Hwy 20

Collection Date/Time: 07/20/2020 13:20

Field ID: G3NW0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2184296	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P384971	
	EPA 300.0 Rev. 2.1	Bromide	0.032	I J	mg Br/L	P385583	MS
		Sulfate	0.98		mg SO4/L	P385321	
	SM 2320 B-2011	Total Alkalinity	1.4	I	mg CaCO3/L	P385067	
	SM 2540 D-2011	TSS	2	I	mg/L	P385467	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385069	
2184297	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P385140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P385054	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384989	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P385231	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P385191	
2184298	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384958	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Refer to the Lab Analysis Report for an explanation of QC Codes.

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: P384971

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384950

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384950

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385200

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385204

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385321

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385583

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385054

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384988

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384989

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385231

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384957

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384958

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P384835

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: P384932

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 2120 B-2011
 Batch ID: P384962

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
 Batch ID: P385064

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: P385067

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

Reference Method: SM 2540 C-2011
Batch ID: P385460

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385466

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385467

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385065

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385069

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385191

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: P384950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	103		P	85 - 115
Calcium	106		P	85 - 115
Iron	106		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	103		P	85 - 115
Sodium	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.0		P	85 - 115
Antimony	96.5		P	85 - 115
Arsenic	98.5		P	85 - 115
Boron	104		P	85 - 115
Cadmium	95.9		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	94.7		P	85 - 115
Lead	94.7		P	85 - 115
Nickel	93.7		P	85 - 115
Selenium	94.2		P	85 - 115
Silver	98.8		P	85 - 115
Thallium	96.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385200

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385321

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	95.0		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384988

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384989

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385231

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384957

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	79.1		P	30 - 160
Acetamiprid	78.6		P	30 - 160
Afidopyropen	65.2		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P384835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	62.6		P	30 - 160
Benzovindiflupyr	69.9		P	30 - 160
Carbamazepine	66.9		P	30 - 160
Clothianidin	76.8		P	30 - 160
Dinotefuran	86.6		P	30 - 160
Diuron	58.2		P	30 - 160
Fenuron	101		P	30 - 160
Fluridone	90.5		P	30 - 160
Hydrocodone	82.3		P	30 - 160
Ibuprofen	79.6		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	97.6		P	30 - 160
Linuron	67.0		P	30 - 160
Mandestrobin	75.5		P	30 - 160
MCPP	129		P	30 - 160
Naproxen	69.1		P	30 - 160
Primidone	77.2		P	30 - 160
Pyraclostrobin	74.1		P	30 - 160
Thiamethoxam	93.7		P	30 - 160
Tolfenpyrad	54.2		P	30 - 160
Triclopyr	95.7		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P384932

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.1		P	40 - 150
AMPA	83.8		P	40 - 150
Endothall	101		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	92.3		P	40 - 140
Sucralose	93.6		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P384962

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

Reference Method: SM 2320 B-2011
Batch ID: P385064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P385067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	93 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P385065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P385069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385191

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184210	Barium	101	104	P/P	80 - 120
2184210	Calcium	99.1		P	80 - 120
2184210	Iron	108	107	P/P	80 - 120
2184210	Magnesium	99.7		P	80 - 120
2184210	Potassium	105	106	P/P	80 - 120
2184210	Sodium	101		P	80 - 120
2184210	Zinc	100	103	P/P	80 - 120
2184243	Barium	106		P	80 - 120
2184243	Calcium	104		P	80 - 120
2184243	Iron	113		P	80 - 120
2184243	Magnesium	102		P	80 - 120
2184243	Potassium	111		P	80 - 120
2184243	Sodium	113		P	80 - 120
2184243	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184210	Aluminum	95.6	96.8	P/P	80 - 120
2184210	Antimony	99.4	101	P/P	80 - 120
2184210	Arsenic	99.6	101	P/P	80 - 120
2184210	Boron	101	102	P/P	80 - 120
2184210	Cadmium	102	104	P/P	80 - 120
2184210	Chromium	99.7	100	P/P	80 - 120
2184210	Copper	93.8	95.4	P/P	80 - 120
2184210	Lead	96.4	96.1	P/P	80 - 120
2184210	Nickel	93.4	95.2	P/P	80 - 120
2184210	Selenium	93.7	98.4	P/P	80 - 120
2184210	Silver	99.7	101	P/P	80 - 120
2184210	Thallium	101	101	P/P	80 - 120
2184243	Aluminum	97.8		P	80 - 120
2184243	Antimony	102		P	80 - 120
2184243	Arsenic	103		P	80 - 120
2184243	Boron	105		P	80 - 120
2184243	Cadmium	102		P	80 - 120
2184243	Chromium	101		P	80 - 120
2184243	Copper	95.2		P	80 - 120
2184243	Lead	98.2		P	80 - 120
2184243	Nickel	94.9		P	80 - 120
2184243	Selenium	98.5		P	80 - 120
2184243	Silver	101		P	80 - 120
2184243	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184164	Chloride	102		P	90 - 110
2184223	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184164	Sulfate	99.7		P	90 - 110
2184223	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184346	Sulfate	94.8		P	90 - 110
2184513	Sulfate	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183463	Bromide	90.8		P	90 - 110
2184296	Bromide	90.0	90.6	F/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184291	Ammonia-N	98.6	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184288	Kjeldahl Nitrogen	92.0	91.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184226	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184297	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184228	Total-P	106	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184297	Total-P	104	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P384957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184166	O-Phosphate-P	98.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P384958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184298	O-Phosphate-P	101	99.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P384835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183089	Acetaminophen	93.3	85.9	P/P	30 - 160
2183089	Acetamiprid	73.3	69.5	P/P	30 - 160
2183089	Afidopyropen	63.4	57.7	P/P	30 - 160
2183089	Benzovindiflupyr	58.9	56.6	P/P	30 - 160
2183089	Carbamazepine	50.1	50.3	P/P	30 - 160
2183089	Clothianidin	76.7	74.8	P/P	30 - 160
2183089	Dinotefuran	96.0	91.4	P/P	30 - 160
2183089	Diuron	38.5	36.6	P/P	30 - 160
2183089	Fenuron	82.7	80.5	P/P	30 - 160
2183089	Fluridone	88.1	80.1	P/P	30 - 160
2183089	Hydrocodone	71.3	66.3	P/P	30 - 160
2183089	Ibuprofen	65.5	62.7	P/P	30 - 160
2183089	Imidacloprid	127	127	P/P	30 - 160
2183089	Linuron	50.4	52.2	P/P	30 - 160
2183089	Mandestrobin	70.9	66.5	P/P	30 - 160
2183089	MCP	122	122	P/P	30 - 160
2183089	Naproxen	76.0	61.5	P/P	30 - 160
2183089	Primidone	88.2	79.7	P/P	30 - 160
2183089	Pyraclostrobin	70.6	70.4	P/P	30 - 160
2183089	Thiamethoxam	101	103	P/P	30 - 160
2183089	Tolfenpyrad	47.2	44.5	P/P	30 - 160
2183089	Triclopyr	97.1	97.1	P/P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P384932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184190	Acesulfame K	88.9	92.0	P/P	40 - 150
2184190	AMPA	81.0	84.2	P/P	40 - 150
2184190	Endothall	100	102	P/P	40 - 150
2184190	Glufosinate	93.4	95.4	P/P	40 - 150
2184190	Glyphosate	77.5	76.4	P/P	40 - 140
2184190	Sucralose	97.4	97.4	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
 Batch ID: P385065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184214	Fluoride	98.6	98.6	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P385069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184402	Fluoride	99.7	99.7	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184227	Organic Carbon	94.0	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184274	Turbidity	1.31	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184210	Barium	2.79	Spike	P	0 - 20
2184210	Calcium	0.534	Spike	P	0 - 20
2184210	Iron	1.17	Spike	P	0 - 20
2184210	Magnesium	1.05	Spike	P	0 - 20
2184210	Potassium	0.726	Spike	P	0 - 20
2184210	Sodium	3.01	Spike	P	0 - 20
2184210	Zinc	2.67	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184210	Aluminum	1.20	Spike	P	0 - 20
2184210	Antimony	1.65	Spike	P	0 - 20
2184210	Arsenic	1.70	Spike	P	0 - 20
2184210	Boron	0.790	Spike	P	0 - 20
2184210	Cadmium	2.00	Spike	P	0 - 20
2184210	Chromium	0.748	Spike	P	0 - 20
2184210	Copper	1.64	Spike	P	0 - 20
2184210	Lead	0.349	Spike	P	0 - 20
2184210	Nickel	1.91	Spike	P	0 - 20
2184210	Selenium	4.85	Spike	P	0 - 20
2184210	Silver	1.09	Spike	P	0 - 20
2184210	Thallium	0.508	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184223	Chloride	0.480	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184223	Sulfate	0.422	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184346	Sulfate	0.298	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184296	Bromide	0.600	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184291	Ammonia-N	0.581	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184288	Kjeldahl Nitrogen	0.472	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184226	NO2NO3-N	1.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184297	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184228	Total-P	7.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184297	Total-P	0.309	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184166	O-Phosphate-P	0.388	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184298	O-Phosphate-P	1.49	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P384835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183089	2,4-D	1.80	Spike	P	0 - 30
2183089	Acetaminophen	8.22	Spike	P	0 - 30
2183089	Acetamiprid	5.27	Spike	P	0 - 30
2183089	Afidopyropen	9.29	Spike	P	0 - 30
2183089	Bentazon	0.870	Spike	P	0 - 30
2183089	Benzovindiflupyr	4.00	Spike	P	0 - 30
2183089	Carbamazepine	0.389	Spike	P	0 - 30
2183089	Clothianidin	2.55	Spike	P	0 - 30
2183089	Dinotefuran	4.88	Spike	P	0 - 30
2183089	Diuron	4.00	Spike	P	0 - 30
2183089	Fenuron	2.69	Spike	P	0 - 30
2183089	Fluridone	7.74	Spike	P	0 - 30
2183089	Hydrocodone	7.24	Spike	P	0 - 30
2183089	Ibuprofen	4.32	Spike	P	0 - 30
2183089	Imazapyr	5.38	Spike	P	0 - 30
2183089	Imidacloprid	0.128	Spike	P	0 - 30
2183089	Linuron	3.57	Spike	P	0 - 30
2183089	Mandestrobin	6.38	Spike	P	0 - 30
2183089	MCP	0.692	Spike	P	0 - 30
2183089	Naproxen	21.1	Spike	P	0 - 30
2183089	Primidone	10.1	Spike	P	0 - 30
2183089	Pyraclostrobin	0.318	Spike	P	0 - 30
2183089	Thiamethoxam	1.10	Spike	P	0 - 30
2183089	Tolfenpyrad	5.84	Spike	P	0 - 30
2183089	Triclopyr	0.00865	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P384932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184190	Acesulfame K	3.50	Spike	P	0 - 30
2184190	AMPA	3.95	Spike	P	0 - 30
2184190	Endothall	1.38	Spike	P	0 - 30
2184190	Glufosinate	2.11	Spike	P	0 - 30
2184190	Glyphosate	1.44	Spike	P	0 - 30
2184190	Sucralose	0.0632	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
 Batch ID: P384962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184223	Color (true)	0.350	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P385064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184214	Total Alkalinity	0.244	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
 Batch ID: P385067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184402	Total Alkalinity	3.11	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P385460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184287	TDS	2.74	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P385065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184214	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
 Batch ID: P385069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184402	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P385191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184227	Organic Carbon	2.11	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2184314
Field Sample ID: G3NW0162

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.0	P	30 - 160
EPA 8321B	Diuron-d6	64.8	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.8	P	30 - 160
EPA 8321B	Primidone-d5	76.2	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100010

Included Lab Sample IDs: 2184288, 2184291, 2184294, 2184297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100012

Included Lab Sample IDs: 2184314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.0	84.9	P/P	60 - 160
Glufosinate	109	105	P/P	60 - 160
Glyphosate	97.0	98.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A100025

Included Lab Sample IDs: 2184314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	79.0	79.3	P/P	60 - 160
Endothall	106	106	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100028

Included Lab Sample IDs: 2184315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.9	97.6	P/P	90 - 110
Antimony	96.8	96.8	P/P	90 - 110
Arsenic	98.3	98.3	P/P	90 - 110
Boron	99.7	99.0	P/P	90 - 110
Cadmium	99.4	98.7	P/P	90 - 110
Chromium	95.1	94.2	P/P	90 - 110
Copper	91.7	92.2	P/P	90 - 110
Lead	96.3	94.9	P/P	90 - 110
Nickel	92.7	93.6	P/P	90 - 110
Selenium	98.8	97.1	P/P	90 - 110
Silver	96.1	95.8	P/P	90 - 110
Thallium	95.2	92.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100030

Included Lab Sample IDs: 2184315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	103	104	P/P	90 - 110
Iron	105	106	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	101	103	P/P	90 - 110
Sodium	103	106	P/P	90 - 110
Zinc	99.6	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A100041

Included Lab Sample IDs: 2184287, 2184290, 2184293, 2184296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.1	P/P	90 - 110
Total Alkalinity	98.1	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100041

Included Lab Sample IDs: 2184287, 2184290, 2184293, 2184296

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100064

Included Lab Sample IDs: 2184288, 2184291, 2184294, 2184297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100073

Included Lab Sample IDs: 2184288, 2184291, 2184294, 2184297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	99.9	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100098

Included Lab Sample IDs: 2184288, 2184291, 2184294, 2184297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	93.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100104

Included Lab Sample IDs: 2184287, 2184290, 2184293

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

Reference Method: EPA 8321B

Run ID: A100141

Included Lab Sample IDs: 2184314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	89.1	89.9	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100152

Included Lab Sample IDs: 2184296

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100186

Included Lab Sample IDs: 2184288, 2184291, 2184294, 2184297

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100250

Included Lab Sample IDs: 2184296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	108	97.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99981

Included Lab Sample IDs: 2184314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	112	112	P/P	50 - 150
Acetaminophen	117	101	P/P	60 - 160
Acetamiprid	117	115	P/P	50 - 150
Afidopyropen	120	116	P/P	50 - 150
Bentazon	125	127	P/P	50 - 160
Benzovindiflupyr	118	117	P/P	50 - 150
Carbamazepine	112	109	P/P	60 - 150
Clothianidin	97.2	101	P/P	60 - 150
Dinotefuran	89.9	94.9	P/P	50 - 150
Diuron	114	115	P/P	60 - 160
Fenuron	111	110	P/P	60 - 150
Fluridone	126	125	P/P	60 - 160
Hydrocodone	105	111	P/P	60 - 150
Ibuprofen	115	80.1	P/P	50 - 160
Imazapyr	126	108	P/P	50 - 150
Imidacloprid	89.6	87.2	P/P	60 - 150
Linuron	121	133	P/P	60 - 150
Mandestrobin	123	118	P/P	50 - 150
MCPP	110	112	P/P	50 - 150
Naproxen	111	96.5	P/P	50 - 160
Primidone	93.9	94.6	P/P	60 - 150
Pyraclostrobin	123	124	P/P	60 - 150
Thiamethoxam	89.0	74.7	P/P	50 - 150
Tolfenpyrad	116	118	P/P	60 - 150
Triclopyr	103	102	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99994

Included Lab Sample IDs: 2184289, 2184292, 2184295, 2184298

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	99.4	P/P	90 - 110
O-Phosphate-P	98.6	97.7	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A99995

Included Lab Sample IDs: 2184287, 2184290, 2184293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	104	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99997

Included Lab Sample IDs: 2184287, 2184290, 2184293, 2184296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

* 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						1.31	
EPA 200.7 Rev. 4.4	Barium	103	101	104	106			2.79
	Calcium	106	99.1	104				0.534
	Iron	106	108	107	113			1.17
	Magnesium	104	99.7	102				1.05
	Potassium	103	105	106	111			0.726
	Sodium	104	101	113				3.01
	Zinc	103	100	103	105			2.67
EPA 200.8 Rev. 5.4	Aluminum	95.0	95.6	96.8	97.8			1.20
	Antimony	96.5	99.4	101	102			1.65
	Arsenic	98.5	99.6	101	103			1.70
	Boron	104	101	102	105			0.790
	Cadmium	95.9	102	104	102			2.00
	Chromium	97.5	99.7	100	101			0.748
	Copper	94.7	93.8	95.4	95.2			1.64
	Lead	94.7	96.4	96.1	98.2			0.349
	Nickel	93.7	93.4	95.2	94.9			1.91
	Selenium	94.2	93.7	98.4	98.5			4.85
	Silver	98.8	99.7	101	101			1.09
	Thallium	96.2	101	101	103			0.508
EPA 300.0 Rev. 2.1	Bromide	95.0	90.0	90.6	90.8			0.600
	Chloride	98.7	102	102			0.480	
	Sulfate	97.9	101	99.7			0.422	
	Sulfate	97.1	94.8	96.6			0.298	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.6	99.2				0.581
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	92.0	91.5				0.472
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	98.2					1.06
	NO ₂ NO ₃ -N	98.5	100	99.5				0.501
EPA 365.1 Rev. 2.0	Total-P	101	106	97.3				7.62
	Total-P	103	104	104				0.309
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	98.4	98.8				0.388
	O-Phosphate-P	99.7	101	99.7				1.49
EPA 8321B	2,4-D	115						1.80
	Acesulfame K	76.1	88.9	92.0				3.50
	Acetaminophen	79.1	93.3	85.9				8.22
	Acetamiprid	78.6	73.3	69.5				5.27
	Afidopyropen	65.2	63.4	57.7				9.29
	AMPA	83.8	81.0	84.2				3.95
	Bentazon	62.6						0.870
	Benzovindiflupyr	69.9	58.9	56.6				4.00
	Carbamazepine	66.9	50.1	50.3				0.389
	Clothianidin	76.8	76.7	74.8				2.55
	Dinotefuran	86.6	96.0	91.4				4.88
	Diuron	58.2	38.5	36.6				4.00
	Endothall	101	100	102				1.38
	Fenuron	101	82.7	80.5				2.69
	Fluridone	90.5	88.1	80.1				7.74
	Glufosinate	105	93.4	95.4				2.11
	Glyphosate	92.3	77.5	76.4				1.44
	Hydrocodone	82.3	71.3	66.3				7.24
	Ibuprofen	79.6	65.5	62.7				4.32
	Imazapyr	100						5.38
	Imidacloprid	97.6	127	127				0.128
	Linuron	67.0	50.4	52.2				3.57

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	75.5	70.9	66.5		6.38
	MCPD	129	122	122		0.692
	Naproxen	69.1	76.0	61.5		21.1
	Primidone	77.2	88.2	79.7		10.1
	Pyraclostrobin	74.1	70.6	70.4		0.318
	Sucralose	93.6	97.4	97.4		0.0632
	Thiamethoxam	93.7	101	103		1.10
	Tolfenpyrad	54.2	47.2	44.5		5.84
	Triclopyr	95.7	97.1	97.1		0.0086
SM 2120 B-2011	Color (true)	102			0.350	
SM 2320 B-2011	Total Alkalinity	100			0.244	
	Total Alkalinity	99.6			3.11	
SM 2540 C-2011	TDS				2.74	
SM 4500 F-C-2011	Fluoride	99.4	98.6	98.6		0.0
	Fluoride	100	99.7	99.7		0.0
SM 5310 B-2011	Organic Carbon	93.8	94.0	97.2		2.11

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2184287, 2184290, 2184293, 2184296
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2184315
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2184315
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2184296
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2184287, 2184290, 2184293
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2184287, 2184290, 2184293, 2184296
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2184288, 2184291, 2184294, 2184297
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2184288, 2184291, 2184294, 2184297
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2184288, 2184291, 2184294, 2184297
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2184288, 2184291, 2184294, 2184297
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2184289, 2184292, 2184295, 2184298
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2184314
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2184314
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2184287, 2184290, 2184293
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2184287, 2184290, 2184293, 2184296
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2184287, 2184290, 2184293
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2184287, 2184290, 2184293, 2184296
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2184287, 2184290, 2184293, 2184296
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2184288, 2184291, 2184294, 2184297

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/21/2020			07/21/2020 16:20	Blanca Fach	2184287, 2184290, 2184293, 2184296
EPA 200.7 Rev. 4.4	07/21/2020	07/21/2020 14:45	Elliott D. Healy	07/22/2020 17:46	Betina Topolski	2184315
EPA 200.8 Rev. 5.4	07/21/2020	07/21/2020 14:45	Elliott D. Healy	07/22/2020 20:36	Alexander Thompson	2184315
EPA 300.0 Rev. 2.1	07/21/2020			07/22/2020 13:30	Julia Storbeck	2184287
	07/21/2020			07/22/2020 14:06	Julia Storbeck	2184290
	07/21/2020			07/22/2020 14:18	Julia Storbeck	2184293
	07/21/2020			07/28/2020 20:39	Julia Storbeck	2184296
	07/21/2020			07/29/2020 00:02	Julia Storbeck	2184296
EPA 350.1 Rev. 2.0	07/21/2020			07/25/2020 11:10	Ping Hua	2184291
	07/21/2020			07/25/2020 11:27	Ping Hua	2184288
	07/21/2020			07/25/2020 11:28	Ping Hua	2184294
	07/21/2020			07/25/2020 11:30	Ping Hua	2184297
EPA 351.2 Rev. 2.0	07/21/2020	07/23/2020 10:10	Sima Feizi	07/24/2020 12:25	Jhamieka S. Greenwood	2184288
	07/21/2020	07/23/2020 10:10	Sima Feizi	07/24/2020 12:33	Jhamieka S. Greenwood	2184291
	07/21/2020	07/23/2020 10:10	Sima Feizi	07/24/2020 12:34	Jhamieka S. Greenwood	2184294
	07/21/2020	07/23/2020 10:10	Sima Feizi	07/24/2020 12:36	Jhamieka S. Greenwood	2184297
EPA 353.2 Rev. 2.0	07/21/2020			07/22/2020 09:18	Beverly Y. Sanders	2184294
	07/21/2020			07/22/2020 09:25	Beverly Y. Sanders	2184297
	07/21/2020			07/22/2020 09:48	Beverly Y. Sanders	2184288
	07/21/2020			07/22/2020 09:49	Beverly Y. Sanders	2184291
EPA 365.1 Rev. 2.0	07/21/2020	07/28/2020 10:00	Lipi Saha	07/30/2020 12:14	Benjamin T. Nordmann	2184288
	07/21/2020	07/28/2020 10:00	Lipi Saha	07/30/2020 12:22	Benjamin T. Nordmann	2184291
	07/21/2020	07/28/2020 10:00	Lipi Saha	07/30/2020 12:23	Benjamin T. Nordmann	2184294
	07/21/2020	07/28/2020 10:00	Lipi Saha	07/30/2020 12:25	Benjamin T. Nordmann	2184297
EPA 365.1 Rev. 2.0 dissolved	07/21/2020			07/21/2020 15:39	Samantha Davila	2184289
	07/21/2020			07/21/2020 15:42	Samantha Davila	2184298
	07/21/2020			07/21/2020 15:44	Samantha Davila	2184292
	07/21/2020			07/21/2020 15:49	Samantha Davila	2184295
EPA 8321B	07/21/2020	07/21/2020 13:30	Rebecca Ware	07/21/2020 15:23	Rebecca Ware	2184314
	07/21/2020	07/21/2020 13:30	Rebecca Ware	07/22/2020 12:50	Rebecca Ware	2184314
	07/21/2020	07/21/2020 13:30	Rebecca Ware	07/29/2020 04:50	Mohammad Ghaffari	2184314
	07/21/2020	07/21/2020 14:00	Hoor Shaik	07/22/2020 04:52	Juyoung Kim	2184314
SM 2120 B-2011	07/21/2020			07/21/2020 17:07	Julia Storbeck	2184287
	07/21/2020			07/21/2020 17:08	Julia Storbeck	2184290
	07/21/2020			07/21/2020 17:09	Julia Storbeck	2184293
SM 2320 B-2011	07/21/2020			07/22/2020 21:16	Dale L. Simmons	2184287
	07/21/2020			07/22/2020 21:51	Dale L. Simmons	2184290
	07/21/2020			07/22/2020 23:05	Dale L. Simmons	2184293
	07/21/2020			07/22/2020 23:14	Dale L. Simmons	2184296
SM 2540 C-2011	07/21/2020			07/22/2020 14:56	Yijie Li	2184287, 2184290, 2184293

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2011	07/21/2020			07/22/2020 14:56	Yijie Li	2184287, 2184290, 2184293, 2184296
SM 4500 F-C-2011	07/21/2020			07/22/2020 21:16	Dale L. Simmons	2184287
	07/21/2020			07/22/2020 21:51	Dale L. Simmons	2184290
	07/21/2020			07/22/2020 23:05	Dale L. Simmons	2184293
	07/21/2020			07/22/2020 23:14	Dale L. Simmons	2184296
	07/21/2020			07/25/2020 00:53	David Boose	2184288
SM 5310 B-2011	07/21/2020			07/25/2020 01:05	David Boose	2184291
	07/21/2020			07/25/2020 01:17	David Boose	2184294
	07/21/2020			07/25/2020 01:29	David Boose	2184297