

Chemical Analysis Report

SE-DIST-2022-04-07-01

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

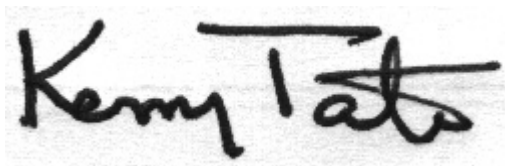
Event Description: **Basinger 4/5**
Request ID: **RQ-2022-04-04-61**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 26-APR-2022 11:23

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Chandler Slough @ Southern US98 Culvert

Collection Date/Time: 04/06/2022 09:10

Field ID: G4SE0142

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317342	DEP SOP: NU-094-1	Color (true)**	87		PCU	P412115	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P412098	
	EPA 300.0 Rev. 2.1	Chloride	420		mg Cl/L	P412281	
		Sulfate	140		mg SO4/L	P412284	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P412529	
	SM 2540 C-2011	TDS	1.22E+03		mg/L	P412422	
	SM 2540 D-2011	TSS	3	I	mg/L	P412427	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P412530	
2317345	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P412160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P412216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.077		mg N/L	P412123	
	EPA 365.1 Rev. 2.0	Total-P	0.47		mg P/L	P412275	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P412182	

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: Chandler Slough @ NW 160th Dr

Collection Date/Time: 04/06/2022 09:40

Field ID: G4SE0143

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317343	DEP SOP: NU-094-1	Color (true)**	97		PCU	P412115	
	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P412098	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P412281	
		Sulfate	71		mg SO4/L	P412284	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P412529	
	SM 2540 C-2011	TDS	472	A	mg/L	P412422	
	SM 2540 D-2011	TSS	9	IA	mg/L	P412427	
	SM 4500-F- C-2011	Fluoride	0.22		mg F/L	P412530	
2317346	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P412160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P412216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P412123	
	EPA 365.1 Rev. 2.0	Total-P	0.86		mg P/L	P412312	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P412182	

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: Oak Creek @ 68

Collection Date/Time: 04/06/2022 10:10

Field ID: G4SE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317348	DEP SOP: NU-094-1	Color (true)**	71		PCU	P412115	
	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P412098	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P412281	
		Sulfate	19		mg SO4/L	P412284	
	SM 2320 B-2011	Total Alkalinity	13		mg CaCO3/L	P412529	
	SM 2540 C-2011	TDS	129		mg/L	P412422	
	SM 2540 D-2011	TSS	66		mg/L	P412427	
2317349	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P412530	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.087		mg N/L	P412160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P412217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P412124	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P412312	
2317360	SM 5310 B-2011	Organic Carbon	14		mg C/L	P412182	
	EPA 8321B	2,4-D	0.019		ug/L	P412180	
		Acesulfame K	0.10	U	ug/L	P412076	
		2,4,5-T	0.0040	U	ug/L	P412180	
		AMPA	0.10	U	ug/L	P412076	
		Acetaminophen	0.0080	U	ug/L	P412180	
		Acetamiprid	0.0020	U	ug/L	P412180	
		Endothall	0.25	U	ug/L	P412076	
		Glufosinate	0.10	U	ug/L	P412076	
		Glyphosate	0.10	U	ug/L	P412076	
		Afidopyropen	0.0020	U	ug/L	P412180	
		Bentazon	8.0E-04	U	ug/L	P412180	
		Sucralose	0.016	I	ug/L	P412076	
		Benzovindiflupyr	0.0020	U	ug/L	P412180	
		Carbamazepine	8.0E-04	U	ug/L	P412180	
		Clothianidin	0.0020	U	ug/L	P412180	
		Dinotefuran	0.0020	U	ug/L	P412180	
		Diuron	0.0020	U	ug/L	P412180	
		Fenuron	0.032	U	ug/L	P412180	
		Fluridone	8.0E-04	U	ug/L	P412180	
		Imazapyr	0.025		ug/L	P412180	
		Hydrocodone	0.0020	U	ug/L	P412180	
		Ibuprofen	0.020	U	ug/L	P412180	
		Imidacloprid	0.0067	I	ug/L	P412180	
		Linuron	0.0040	U	ug/L	P412180	
		Mandestrobin	0.0020	U	ug/L	P412180	
		MCPP	0.0040	U	ug/L	P412180	
		Naproxen	0.0080	U	ug/L	P412180	
		Primidone	0.0040	U	ug/L	P412180	
		Pyraclostrobin	0.0020	U	ug/L	P412180	
		Silvex	0.0040	U	ug/L	P412180	
		Thiamethoxam	0.0020	U	ug/L	P412180	

Field ID: G4SE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317360	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P412180	
		Triclopyr	0.0040	U	ug/L	P412180	
2317362	EPA 200.7 Rev. 4.4	Calcium	12.2		mg/L	P412113	
		Iron	580		ug/L	P412113	
		Magnesium	4.70		mg/L	P412113	
		Potassium	5.0		mg/L	P412113	
		Sodium	16.7		mg/L	P412113	
		Strontium	286		ug/L	P412113	
		Tin	3.0	U	ug/L	P412113	
		Titanium	0.95	I	ug/L	P412113	
		Vanadium	2.0	U	ug/L	P412113	
		Zinc	5.0	U	ug/L	P412113	
	EPA 200.8 Rev. 5.4	Aluminum	73		ug/L	P412113	
		Antimony	0.050	U	ug/L	P412113	
		Arsenic	0.58		ug/L	P412113	
		Barium	17.8		ug/L	P412113	
		Beryllium	0.010	U	ug/L	P412113	
		Boron**	36.5		ug/L	P412113	
		Cadmium	0.020	U	ug/L	P412113	
		Chromium	0.57	I	ug/L	P412113	
		Cobalt	0.150		ug/L	P412113	
		Copper	0.40	U	ug/L	P412113	
		Lead	0.20	U	ug/L	P412113	
		Manganese	34.7		ug/L	P412113	
		Molybdenum	0.15	U	ug/L	P412113	
		Nickel	0.50	U	ug/L	P412113	
		Selenium	0.20	U	ug/L	P412113	
		Silver	0.010	U	ug/L	P412113	
		Thallium	0.10	U	ug/L	P412113	
	SM 2340 B-2011	Hardness	49.8		mg/L	P412113	

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: Gore Branch/Chandler Slough @ NW 240th St Collection Date/Time: 04/06/2022 11:20

Field ID: G4SE0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317344	DEP SOP: NU-094-1	Color (true)**	55		PCU	P412115	
	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P412098	
	EPA 300.0 Rev. 2.1	Chloride	420		mg Cl/L	P412281	
		Sulfate	180		mg SO4/L	P412284	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P412529	
	SM 2540 C-2011	TDS	1.01E+03		mg/L	P412422	
	SM 2540 D-2011	TSS	3	I	mg/L	P412427	
	SM 4500-F- C-2011	Fluoride	0.21		mg F/L	P412530	
2317347	EPA 350.1 Rev. 2.0	Ammonia-N	0.063		mg N/L	P412160	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P412329	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P412123	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P412312	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P412182	

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: Gore Branch @ 724

Collection Date/Time: 04/06/2022 10:50

Field ID: G4SE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2317361	EPA 8321B	2,4-D	0.0040	I	ug/L	P412180	
		Acesulfame K	0.10	U	ug/L	P412076	
		2,4,5-T	0.0040	U	ug/L	P412180	
		AMPA	0.16	I	ug/L	P412076	
		Acetaminophen	0.0080	U	ug/L	P412180	
		Acetamiprid	0.0020	U	ug/L	P412180	
		Endothall	0.25	U	ug/L	P412076	
		Glufosinate	0.10	U	ug/L	P412076	
		Glyphosate	0.10	U	ug/L	P412076	
		Afidopyropen	0.0020	U	ug/L	P412180	
		Bentazon	0.0012	I	ug/L	P412180	
		Sucralose	0.044		ug/L	P412076	
		Benzovindiflupyr	0.0020	U	ug/L	P412180	
		Carbamazepine	8.0E-04	U	ug/L	P412180	
		Clothianidin	0.0020	U	ug/L	P412180	
		Dinotefuran	0.0020	U	ug/L	P412180	
		Diuron	0.0020	U	ug/L	P412180	
		Fenuron	0.032	U	ug/L	P412180	
		Fluridone	0.046		ug/L	P412180	
		Imazapyr	0.081		ug/L	P412180	
		Hydrocodone	0.0020	U	ug/L	P412180	
		Ibuprofen	0.020	U	ug/L	P412180	
		Imidacloprid	0.0022	I	ug/L	P412180	
		Linuron	0.0040	U	ug/L	P412180	
		Mandestrobin	0.0020	U	ug/L	P412180	
		MCPP	0.0040	U	ug/L	P412180	
		Naproxen	0.0080	U	ug/L	P412180	
		Primidone	0.0040	U	ug/L	P412180	
		Pyraclostrobin	0.0020	U	ug/L	P412180	
		Silvex	0.0040	U	ug/L	P412180	
		Thiamethoxam	0.0020	U	ug/L	P412180	
		Tolfenpyrad	0.0020	U	ug/L	P412180	
		Triclopyr	0.0040	U	ug/L	P412180	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P412115

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412098

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412113

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412113

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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: P412281

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412284

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412160

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412216

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412217

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412329

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412124

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412275

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412312

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P412076

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P412180

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P412529

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

Reference Method: SM 2540 C-2011

Batch ID: P412422

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P412427

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P412530

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P412182

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P412115

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.7		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	80 - 120
Iron	106		P	80 - 120
Magnesium	101		P	80 - 120
Potassium	104		P	80 - 120
Sodium	109		P	80 - 120
Strontium	101		P	80 - 120
Tin	103		P	80 - 120
Titanium	104		P	80 - 120
Vanadium	96.7		P	80 - 120
Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	99.5		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	91.6		P	85 - 115
Boron	105		P	85 - 115
Cadmium	98.6		P	85 - 115
Chromium	97.4		P	85 - 115
Cobalt	99.3		P	85 - 115
Copper	97.7		P	85 - 115
Lead	94.5		P	85 - 115
Manganese	99.4		P	85 - 115
Molybdenum	99.9		P	85 - 115
Nickel	98.8		P	85 - 115
Selenium	100		P	85 - 115
Silver	98.1		P	85 - 115
Thallium	96.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412281

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412284

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412160

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	90.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412217

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412329

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412124

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412275

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412312

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P412076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	84.8		P	40 - 150
AMPA	116		P	40 - 150
Endothall	57.8		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	107		P	40 - 150
Sucralose	85.7		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P412180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
2,4,5-T	84.6		P	40 - 150
Acetaminophen	52.0		P	30 - 150
Acetamiprid	75.7		P	40 - 150
Afidopyropen	63.9		P	40 - 150
Bentazon	112		P	30 - 150
Benzovindiflupyr	81.1		P	40 - 150
Carbamazepine	96.9		P	40 - 150
Clothianidin	76.7		P	40 - 150
Dinotefuran	80.7		P	40 - 150
Diuron	72.5		P	40 - 150
Fenuron	119		P	40 - 150
Fluridone	66.9		P	40 - 150
Hydrocodone	72.9		P	40 - 150
Ibuprofen	56.5		P	40 - 150
Imazapyr	91.9		P	40 - 150
Imidacloprid	82.4		P	40 - 150
Linuron	70.8		P	40 - 150
Mandestrobin	60.5		P	40 - 150
MCPP	128		P	40 - 150
Naproxen	74.6		P	40 - 150
Primidone	59.7		P	40 - 150
Pyraclostrobin	76.9		P	40 - 150
Silvex	86.8		P	40 - 150
Thiamethoxam	81.4		P	40 - 150
Tolfenpyrad	41.3		P	30 - 150
Triclopyr	86.1		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P412529

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P412530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P412182

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315168	Calcium	101		P	80 - 120
2315168	Iron	103	104	P/P	80 - 120
2315168	Magnesium	101		P	80 - 120
2315168	Potassium	103	105	P/P	80 - 120
2315168	Sodium	108	106	P/P	80 - 120
2315168	Strontium	102	101	P/P	80 - 120
2315168	Tin	98.1	98.0	P/P	80 - 120
2315168	Titanium	100	102	P/P	80 - 120
2315168	Vanadium	95.4	97.1	P/P	80 - 120
2315168	Zinc	95.0	96.7	P/P	80 - 120
2317004	Calcium	101		P	80 - 120
2317004	Iron	102		P	80 - 120
2317004	Magnesium	102		P	80 - 120
2317004	Potassium	103		P	80 - 120
2317004	Sodium	102		P	80 - 120
2317004	Strontium	101		P	80 - 120
2317004	Tin	102		P	80 - 120
2317004	Titanium	101		P	80 - 120
2317004	Vanadium	95.6		P	80 - 120
2317004	Zinc	99.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315168	Aluminum	99.8	101	P/P	80 - 120
2315168	Antimony	100	101	P/P	80 - 120
2315168	Arsenic	99.0	102	P/P	80 - 120
2315168	Barium	101	103	P/P	80 - 120
2315168	Beryllium	91.7	93.7	P/P	80 - 120
2315168	Boron	105	106	P/P	80 - 120
2315168	Cadmium	99.4	100	P/P	80 - 120
2315168	Chromium	98.1	102	P/P	80 - 120
2315168	Cobalt	96.0	98.5	P/P	80 - 120
2315168	Copper	91.4	93.6	P/P	80 - 120
2315168	Lead	92.6	94.0	P/P	80 - 120
2315168	Manganese	98.0	102	P/P	80 - 120
2315168	Molybdenum	101	104	P/P	80 - 120
2315168	Nickel	94.8	97.1	P/P	80 - 120
2315168	Selenium	96.7	99.4	P/P	80 - 120
2315168	Silver	96.2	97.0	P/P	80 - 120
2315168	Thallium	96.9	99.0	P/P	80 - 120
2317004	Aluminum	102		P	80 - 120
2317004	Antimony	97.6		P	80 - 120
2317004	Arsenic	97.1		P	80 - 120
2317004	Barium	101		P	80 - 120
2317004	Beryllium	86.7		P	80 - 120
2317004	Boron	108		P	80 - 120
2317004	Cadmium	97.3		P	80 - 120
2317004	Chromium	95.9		P	80 - 120
2317004	Cobalt	96.0		P	80 - 120
2317004	Copper	96.3		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317004	Lead	93.6		P	80 - 120
2317004	Manganese	99.2		P	80 - 120
2317004	Molybdenum	97.0		P	80 - 120
2317004	Nickel	96.0		P	80 - 120
2317004	Selenium	92.3		P	80 - 120
2317004	Silver	96.5		P	80 - 120
2317004	Thallium	95.3		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317098	Chloride	98.6		P	90 - 110
2317348	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317098	Sulfate	101		P	90 - 110
2317348	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317376	Ammonia-N	95.0	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317501	Kjeldahl Nitrogen	98.0	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317349	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2316917	Kjeldahl Nitrogen	104	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317347	NO2NO3-N	101	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317349	NO2NO3-N	100	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317195	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317376	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P412076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317274	Acesulfame K	128	135	P/P	40 - 150
2317274	AMPA	116	96.3	P/P	40 - 150
2317274	Endothall	91.0	73.4	P/P	40 - 150
2317274	Glufosinate	104	88.5	P/P	40 - 150
2317274	Glyphosate	100	96.9	P/P	40 - 150
2317274	Sucralose	92.6	93.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P412180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2316982	2,4,5-T	128	125	P/P	40 - 150
2316982	Acetaminophen	94.4	107	P/P	30 - 150
2316982	Acetamiprid	92.9	103	P/P	40 - 150
2316982	Afidopyropen	71.5	70.0	P/P	40 - 150
2316982	Benzovindiflupyr	80.6	97.3	P/P	40 - 150
2316982	Carbamazepine	92.1	104	P/P	40 - 150
2316982	Clothianidin	69.5	121	P/P	40 - 150
2316982	Dinotefuran	120	130	P/P	40 - 150
2316982	Diuron	97.6	91.7	P/P	40 - 150
2316982	Fenuron	118	110	P/P	40 - 150
2316982	Fluridone	65.1	72.1	P/P	40 - 150
2316982	Hydrocodone	90.4	102	P/P	40 - 150
2316982	Ibuprofen	52.0	65.4	P/P	40 - 150
2316982	Imazapyr	86.7	105	P/P	40 - 150
2316982	Linuron	58.6	68.7	P/P	40 - 150
2316982	Mandestrobin	84.0	92.5	P/P	40 - 150
2316982	MCCP	141	146	P/P	40 - 150
2316982	Naproxen	116	85.9	P/P	40 - 150
2316982	Primidone	96.0	115	P/P	40 - 150
2316982	Pyraclostrobin	84.3	93.6	P/P	40 - 150
2316982	Silvex	115	136	P/P	40 - 150
2316982	Tolfenpyrad	59.4	45.5	P/P	30 - 150
2316982	Triclopyr	116	133	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P412530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317855	Fluoride	98.9	97.0	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2317103	Organic Carbon	99.6	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P412115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317198	Color (true)	5.07	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317344	Turbidity	6.74	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315168	Calcium	0.249	Spike	P	0 - 20
2315168	Iron	1.58	Spike	P	0 - 20
2315168	Magnesium	1.80	Spike	P	0 - 20
2315168	Potassium	1.41	Spike	P	0 - 20
2315168	Sodium	0.714	Spike	P	0 - 20
2315168	Strontium	0.630	Spike	P	0 - 20
2315168	Tin	0.0584	Spike	P	0 - 20
2315168	Titanium	1.56	Spike	P	0 - 20
2315168	Vanadium	1.85	Spike	P	0 - 20
2315168	Zinc	0.962	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315168	Aluminum	1.38	Spike	P	0 - 20
2315168	Antimony	1.22	Spike	P	0 - 20
2315168	Arsenic	2.97	Spike	P	0 - 20
2315168	Barium	1.52	Spike	P	0 - 20
2315168	Beryllium	2.22	Spike	P	0 - 20
2315168	Boron	1.44	Spike	P	0 - 20
2315168	Cadmium	0.916	Spike	P	0 - 20
2315168	Chromium	4.17	Spike	P	0 - 20
2315168	Cobalt	2.51	Spike	P	0 - 20
2315168	Copper	2.00	Spike	P	0 - 20
2315168	Lead	1.40	Spike	P	0 - 20
2315168	Manganese	2.40	Spike	P	0 - 20
2315168	Molybdenum	2.30	Spike	P	0 - 20
2315168	Nickel	2.38	Spike	P	0 - 20
2315168	Selenium	2.74	Spike	P	0 - 20
2315168	Silver	0.766	Spike	P	0 - 20
2315168	Thallium	2.10	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317098	Chloride	0.0665	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317098	Sulfate	0.319	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317376	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317501	Kjeldahl Nitrogen	6.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317349	Kjeldahl Nitrogen	0.906	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2316917	Kjeldahl Nitrogen	4.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317347	NO2NO3-N	1.22	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317349	NO2NO3-N	0.930	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317195	Total-P	0.464	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317376	Total-P	0.912	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P412076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317274	Acesulfame K	4.86	Spike	P	0 - 30
2317274	AMPA	18.8	Spike	P	0 - 30
2317274	Endothall	21.4	Spike	P	0 - 30
2317274	Glufosinate	15.7	Spike	P	0 - 30
2317274	Glyphosate	3.54	Spike	P	0 - 30
2317274	Sucralose	0.993	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P412180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2316982	2,4-D	8.21	Spike	P	0 - 30
2316982	2,4,5-T	2.30	Spike	P	0 - 30
2316982	Acetaminophen	12.3	Spike	P	0 - 30
2316982	Acetamiprid	10.4	Spike	P	0 - 30
2316982	Afidopyropen	2.11	Spike	P	0 - 30
2316982	Bentazon	2.18	Spike	P	0 - 30
2316982	Benzovindiflupyr	18.8	Spike	P	0 - 30
2316982	Carbamazepine	12.2	Spike	P	0 - 30
2316982	Clothianidin	26.8	Spike	P	0 - 30
2316982	Dinotefuran	7.97	Spike	P	0 - 30
2316982	Diuron	5.38	Spike	P	0 - 30
2316982	Fenuron	6.94	Spike	P	0 - 30
2316982	Fluridone	10.1	Spike	P	0 - 30
2316982	Hydrocodone	11.8	Spike	P	0 - 30
2316982	Ibuprofen	22.8	Spike	P	0 - 30
2316982	Imazapyr	17.5	Spike	P	0 - 30
2316982	Imidacloprid	13.6	Spike	P	0 - 30
2316982	Linuron	15.8	Spike	P	0 - 30
2316982	Mandestrobin	9.58	Spike	P	0 - 30
2316982	MCPP	3.91	Spike	P	0 - 30
2316982	Naproxen	29.9	Spike	P	0 - 30
2316982	Primidone	17.7	Spike	P	0 - 30
2316982	Pyraclostrobin	10.4	Spike	P	0 - 30
2316982	Silvex	17.1	Spike	P	0 - 30
2316982	Thiamethoxam	0.302	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P412180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2316982	Tolfenpyrad	26.5	Spike	P	0 - 30
2316982	Triclopyr	13.2	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P412529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317855	Total Alkalinity	1.10	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P412422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317343	TDS	6.98	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P412530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317855	Fluoride	1.00	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P412182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2317103	Organic Carbon	1.15	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2317360
Field Sample ID: G4SE0080

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.4	P	30 - 160
EPA 8321B	Diuron-d6	52.4	P	30 - 160
EPA 8321B	Endothall-d6	62.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.6	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2317361
Field Sample ID: G4SE0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.2	P	30 - 160
EPA 8321B	Diuron-d6	57.5	P	30 - 160
EPA 8321B	Endothall-d6	75.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.2	P	30 - 160
EPA 8321B	Primidone-d5	94.1	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111369

Included Lab Sample IDs: 2317342, 2317343, 2317344, 2317348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A111381

Included Lab Sample IDs: 2317342, 2317343, 2317344, 2317348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111383

Included Lab Sample IDs: 2317345, 2317346, 2317347, 2317349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.1	P/P	90 - 110
Ammonia-N	98.5	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111384

Included Lab Sample IDs: 2317345, 2317346, 2317347, 2317349

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

Reference Method: SM 5310 B-2011

Run ID: A111406

Included Lab Sample IDs: 2317345, 2317346, 2317347, 2317349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111413

Included Lab Sample IDs: 2317360, 2317361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	132	125	P/P	60 - 160
Glufosinate	129	129	P/P	60 - 160
Glyphosate	121	123	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111419

Included Lab Sample IDs: 2317360, 2317361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.4	86.0	P/P	60 - 160
Endothall	75.8	87.5	P/P	60 - 160
Sucralose	92.1	94.4	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111423

Included Lab Sample IDs: 2317362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	102	P/P	90 - 110
Antimony	102	101	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Barium	98.9	98.6	P/P	90 - 110
Beryllium	93.6	92.1	P/P	90 - 110
Boron	105	105	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	99.4	98.8	P/P	90 - 110
Cobalt	98.6	98.3	P/P	90 - 110
Copper	98.2	98.5	P/P	90 - 110
Lead	93.8	95.0	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	99.1	98.3	P/P	90 - 110
Nickel	99.3	99.3	P/P	90 - 110
Selenium	100	98.2	P/P	90 - 110
Silver	100	100	P/P	90 - 110
Thallium	92.9	92.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111443

Included Lab Sample IDs: 2317342, 2317343, 2317344, 2317348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	98.8	P/P	90 - 110
Chloride	99.3	99.0	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111499

Included Lab Sample IDs: 2317360, 2317361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	111	118	P/P	50 - 150
2,4,5-T	127	133	P/P	50 - 150
Acetaminophen	89.2	91.4	P/P	60 - 160
Acetamiprid	86.5	89.1	P/P	50 - 150
Afidopyropen	87.3	88.0	P/P	50 - 150
Bentazon	155	143	P/P	50 - 160
Benzovindiflupyr	95.9	89.6	P/P	50 - 150
Carbamazepine	94.5	97.1	P/P	60 - 150
Clothianidin	83.7	107	P/P	60 - 150
Dinotefuran	87.2	84.6	P/P	50 - 150
Diuron	119	122	P/P	60 - 160
Fenuron	88.9	91.0	P/P	60 - 150
Fluridone	88.8	105	P/P	60 - 160
Hydrocodone	90.9	92.0	P/P	60 - 150
Ibuprofen	60.8	113	P/P	50 - 160
Imazapyr	95.2	98.3	P/P	50 - 150
Imidacloprid	83.3	84.6	P/P	60 - 150
Linuron	68.0	68.3	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A111499

Included Lab Sample IDs: 2317360, 2317361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	92.4	87.5	P/P	50 - 150
MCPD	114	128	P/P	50 - 150
Naproxen	88.7	79.3	P/P	50 - 160
Primidone	122	78.4	P/P	60 - 150
Pyraclostrobin	92.7	103	P/P	60 - 150
Silvex	134	138	P/P	50 - 150
Thiamethoxam	86.0	80.3	P/P	50 - 150
Tolfenpyrad	95.9	78.3	P/P	60 - 150
Triclopyr	109	115	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111510

Included Lab Sample IDs: 2317362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	106	107	P/P	90 - 110
Sodium	104	105	P/P	90 - 110
Strontium	98.6	103	P/P	90 - 110
Tin	99.8	99.3	P/P	90 - 110
Titanium	98.3	98.7	P/P	90 - 110
Vanadium	99.3	101	P/P	90 - 110
Zinc	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111516

Included Lab Sample IDs: 2317345, 2317346, 2317347, 2317349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.4	P/P	90 - 110
Total-P	98.4	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111549

Included Lab Sample IDs: 2317342, 2317343, 2317344, 2317348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	97.4	P/P	90 - 110
Total Alkalinity	97.4	95.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111549

Included Lab Sample IDs: 2317342, 2317343, 2317344, 2317348

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111553

Included Lab Sample IDs: 2317345, 2317346, 2317349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	94.9	P/P	90 - 110
Kjeldahl Nitrogen	94.9	96.0	P/P	90 - 110
Kjeldahl Nitrogen	96.0	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111587

Included Lab Sample IDs: 2317347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	100	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
DEP SOP: NU-094-1	Color (true)	101					5.07	
EPA 180.1 Rev. 2.0	Turbidity	95.7					6.74	
EPA 200.7 Rev. 4.4	Calcium	103	101	101				0.249
	Iron	106	103	104	102			1.58
	Magnesium	101	101	102				1.80
	Potassium	104	103	105	103			1.41
	Sodium	109	108	106	102			0.714
	Strontium	101	102	101	101			0.630
	Tin	103	98.1	98.0	102			0.0584
	Titanium	104	100	102	101			1.56
	Vanadium	96.7	95.4	97.1	95.6			1.85
	Zinc	102	95.0	96.7	99.9			0.962
EPA 200.8 Rev. 5.4	Aluminum	103	99.8	101	102			1.38
	Antimony	99.5	100	101	97.6			1.22
	Arsenic	101	99.0	102	97.1			2.97
	Barium	104	101	103	101			1.52
	Beryllium	91.6	91.7	93.7	86.7			2.22
	Boron	105	105	106	108			1.44
	Cadmium	98.6	99.4	100	97.3			0.916
	Chromium	97.4	98.1	102	95.9			4.17
	Cobalt	99.3	96.0	98.5	96.0			2.51
	Copper	97.7	91.4	93.6	96.3			2.00
	Lead	94.5	92.6	94.0	93.6			1.40
	Manganese	99.4	98.0	102	99.2			2.40
	Molybdenum	99.9	101	104	97.0			2.30
	Nickel	98.8	94.8	97.1	96.0			2.38
	Selenium	100	96.7	99.4	92.3			2.74
	Silver	98.1	96.2	97.0	96.5			0.766
	Thallium	96.3	96.9	99.0	95.3			2.10
EPA 300.0 Rev. 2.1	Chloride	101	98.6	100			0.0665	
	Sulfate	102	101	101			0.319	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	95.0	96.6				1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	90.7	98.0	108				6.95
	Kjeldahl Nitrogen	97.1	104	106				0.906
	Kjeldahl Nitrogen	102	104	99.7				4.03
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	99.1				1.22
	NO2NO3-N	101	100	99.3				0.930
EPA 365.1 Rev. 2.0	Total-P	104	104	105				0.464
	Total-P	101	104	105				0.912
EPA 8321B	2,4-D	110						8.21
	2,4,5-T	84.6	128	125				2.30
	Acesulfame K	84.8	128	135				4.86
	Acetaminophen	52.0	94.4	107				12.3
	Acetamiprid	75.7	92.9	103				10.4
	Afidopyropen	63.9	71.5	70.0				2.11
	AMPA	116	116	96.3				18.8
	Bentazon	112						2.18
	Benzovindiflupyr	81.1	80.6	97.3				18.8
	Carbamazepine	96.9	92.1	104				12.2
	Clothianidin	76.7	69.5	121				26.8
	Dinotefuran	80.7	120	130				7.97
	Diuron	72.5	97.6	91.7				5.38
	Endothall	57.8	91.0	73.4				21.4
	Fenuron	119	118	110				6.94

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Fluridone	66.9	65.1	72.1		10.1
	Glufosinate	104	104	88.5		15.7
	Glyphosate	107	96.9	100		3.54
	Hydrocodone	72.9	90.4	102		11.8
	Ibuprofen	56.5	52.0	65.4		22.8
	Imazapyr	91.9	86.7	105		17.5
	Imidacloprid	82.4				13.6
	Linuron	70.8	58.6	68.7		15.8
	Mandestrobin	60.5	84.0	92.5		9.58
	MCPP	128	141	146		3.91
	Naproxen	74.6	116	85.9		29.9
	Primidone	59.7	96.0	115		17.7
	Pyraclostrobin	76.9	84.3	93.6		10.4
	Silvex	86.8	115	136		17.1
	Sucralose	85.7	92.6	93.6		0.993
	Thiamethoxam	81.4				0.302
	Tolfenpyrad	41.3	59.4	45.5		26.5
	Triclopyr	86.1	116	133		13.2
SM 2320 B-2011	Total Alkalinity	97.8				1.10
SM 2540 C-2011	TDS					6.98
SM 4500-F- C-2011	Fluoride	98.0	98.9	97.0		1.00
SM 5310 B-2011	Organic Carbon	100	99.6	97.4		1.15

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2317342, 2317343, 2317344, 2317348
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2317342, 2317343, 2317344, 2317348
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2317362
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2317362
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2317342, 2317343, 2317344, 2317348
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2317342, 2317343, 2317344, 2317348
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2317345, 2317346, 2317347, 2317349
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2317345, 2317346, 2317347, 2317349
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2317345, 2317346, 2317347, 2317349
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2317345, 2317346, 2317347, 2317349
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2317360, 2317361
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2317342, 2317343, 2317344, 2317348
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2317362
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2317342, 2317343, 2317344, 2317348
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2317342, 2317343, 2317344, 2317348
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2317342, 2317343, 2317344, 2317348
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2317345, 2317346, 2317347, 2317349

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	04/07/2022			04/07/2022 16:22	Samantha L Bates	2317342
	04/07/2022			04/07/2022 16:23	Samantha L Bates	2317343, 2317344
	04/07/2022			04/07/2022 16:24	Samantha L Bates	2317348
EPA 180.1 Rev. 2.0	04/07/2022			04/07/2022 14:30	Anna M. Plaviak	2317342
	04/07/2022			04/07/2022 14:31	Anna M. Plaviak	2317343
	04/07/2022			04/07/2022 14:33	Anna M. Plaviak	2317344
	04/07/2022			04/07/2022 14:35	Anna M. Plaviak	2317348
EPA 200.7 Rev. 4.4	04/07/2022	04/08/2022 10:30	Megan Whitefoot	04/13/2022 20:02	Josef B Mick	2317362
EPA 200.8 Rev. 5.4	04/07/2022	04/08/2022 10:30	Megan Whitefoot	04/11/2022 20:47	Emily M Philpot	2317362
EPA 300.0 Rev. 2.1	04/07/2022			04/12/2022 03:20	James L Waggeberby	2317348
	04/07/2022			04/12/2022 05:09	James L Waggeberby	2317342
	04/07/2022			04/12/2022 05:46	James L Waggeberby	2317343
	04/07/2022			04/12/2022 05:58	James L Waggeberby	2317344
EPA 350.1 Rev. 2.0	04/07/2022			04/08/2022 12:48	Ping Hua	2317349
	04/07/2022			04/08/2022 13:29	Ping Hua	2317345
	04/07/2022			04/08/2022 13:30	Ping Hua	2317346
	04/07/2022			04/08/2022 13:32	Ping Hua	2317347
EPA 351.2 Rev. 2.0	04/07/2022	04/14/2022 16:34	Samantha L Bates	04/19/2022 14:20	Alexandra J Mattheus	2317345
	04/07/2022	04/14/2022 16:34	Samantha L Bates	04/19/2022 14:25	Alexandra J Mattheus	2317346
	04/07/2022	04/14/2022 16:34	Samantha L Bates	04/19/2022 14:48	Alexandra J Mattheus	2317349
	04/07/2022	04/20/2022 10:53	Samantha L Bates	04/20/2022 16:42	Alexandra J Mattheus	2317347
EPA 353.2 Rev. 2.0	04/07/2022			04/08/2022 09:30	Beverly Y. Sanders	2317345
	04/07/2022			04/08/2022 09:31	Beverly Y. Sanders	2317346
	04/07/2022			04/08/2022 09:32	Beverly Y. Sanders	2317347
	04/07/2022			04/08/2022 09:39	Beverly Y. Sanders	2317349
EPA 365.1 Rev. 2.0	04/07/2022	04/14/2022 14:00	Simonne.V. Calhoun	04/15/2022 15:59	Sarah A Nixon	2317345
	04/07/2022	04/14/2022 14:00	Simonne.V. Calhoun	04/15/2022 16:06	Sarah A Nixon	2317346
	04/07/2022	04/14/2022 14:00	Simonne.V. Calhoun	04/15/2022 16:09	Sarah A Nixon	2317347
	04/07/2022	04/14/2022 14:00	Simonne.V. Calhoun	04/15/2022 16:10	Sarah A Nixon	2317349
EPA 8321B	04/07/2022	04/08/2022 14:00	Manjita Shrestha	04/08/2022 20:42	Manjita Shrestha	2317360
	04/07/2022	04/08/2022 14:00	Manjita Shrestha	04/08/2022 20:55	Manjita Shrestha	2317361
	04/07/2022	04/08/2022 14:00	Manjita Shrestha	04/09/2022 11:08	Manjita Shrestha	2317360
	04/07/2022	04/08/2022 14:00	Manjita Shrestha	04/09/2022 11:23	Manjita Shrestha	2317361
	04/07/2022	04/12/2022 08:00	June Rhew	04/13/2022 05:52	Juyoung Kim	2317360
SM 2320 B-2011	04/07/2022	04/12/2022 08:00	June Rhew	04/13/2022 06:27	Juyoung Kim	2317361
	04/07/2022			04/18/2022 21:55	Dale L. Simmons	2317343
	04/07/2022			04/18/2022 22:39	Dale L. Simmons	2317348
	04/07/2022			04/19/2022 01:07	Dale L. Simmons	2317342
	04/07/2022			04/19/2022 01:21	Dale L. Simmons	2317344
SM 2340 B-2011	04/07/2022			04/13/2022 20:02	Josef B Mick	2317362

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2011	04/07/2022			04/08/2022 15:29	Yijie Li	2317342, 2317343, 2317344, 2317348
SM 2540 D-2011	04/07/2022			04/08/2022 15:29	Yijie Li	2317342, 2317343, 2317344, 2317348
SM 4500-F- C-2011	04/07/2022			04/18/2022 21:55	Dale L. Simmons	2317343
	04/07/2022			04/18/2022 22:39	Dale L. Simmons	2317348
	04/07/2022			04/19/2022 01:07	Dale L. Simmons	2317342
	04/07/2022			04/19/2022 01:21	Dale L. Simmons	2317344
SM 5310 B-2011	04/07/2022			04/09/2022 02:49	Khloe J Berg	2317345
	04/07/2022			04/09/2022 03:02	Khloe J Berg	2317346
	04/07/2022			04/09/2022 03:15	Khloe J Berg	2317347
	04/07/2022			04/09/2022 03:28	Khloe J Berg	2317349