

Chemical Analysis Report

NE-DIST-2022-04-22-02

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

Event Description: **Nassau North West**
Request ID: **RQ-2022-04-18-16**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 12-MAY-2022 08:23

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: St Marys S Prong @ US 90

Collection Date/Time: 04/21/2022 13:05

Field ID: 19010021

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2321433	DEP SOP: NU-094-1	Color (true)**	420		PCU	P412785	
	EPA 180.1 Rev. 2.0	Turbidity	8.8	A	NTU	P412786	
	EPA 300.0 Rev. 2.1	Chloride	8.7		mg Cl/L	P413251	
		Sulfate	1.0		mg SO4/L	P413253	
	SM 2320 B-2011	Total Alkalinity	3.8		mg CaCO3/L	P413184	
	SM 2540 C-2011	TDS	100		mg/L	P413206	
	SM 2540 D-2011	TSS	2	I	mg/L	P413356	
	SM 4500-F- C-2011	Fluoride	0.041	I	mg F/L	P413189	
2321434	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P413279	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P413270	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.067		mg N/L	P413027	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P413392	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P413058	
2321441	EPA 200.7 Rev. 4.4	Calcium	4.60		mg/L	P412803	
		Iron	1.17E+03		ug/L	P412803	
		Magnesium	1.30		mg/L	P412803	
		Potassium	0.53	I	mg/L	P412803	
		Sodium	5.7		mg/L	P412803	
		Strontium	29.7		ug/L	P412803	
		Tin	3.0	U	ug/L	P412803	
		Titanium	2.4	I	ug/L	P412803	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P412803	
		Zinc	5.0	U	ug/L	P412803	
		Aluminum	691		ug/L	P412803	
		Antimony	0.075	I	ug/L	P412803	
		Arsenic	0.40		ug/L	P412803	
		Barium	18.3		ug/L	P412803	
		Beryllium	0.045		ug/L	P412803	
		Boron**	16.3		ug/L	P412803	
		Cadmium	0.020	U	ug/L	P412803	
		Chromium	0.82	I	ug/L	P412803	
		Cobalt	0.313		ug/L	P412803	
		Copper	0.42	I	ug/L	P412803	
		Lead	0.73		ug/L	P412803	
		Manganese	15.3		ug/L	P412803	
		Molybdenum	0.15	U	ug/L	P412803	
		Nickel	0.70	I	ug/L	P412803	
		Selenium	0.20	U	ug/L	P412803	
		Silver	0.010	U	ug/L	P412803	
		Thallium	0.10	U	ug/L	P412803	
	SM 2340 B-2011	Hardness	16.8		mg/L	P412803	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 04/28/2022.

Sample Location: Daughtery Branch @ CR125 S

Collection Date/Time: 04/21/2022 14:15

Field ID: 19010125

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2321440	EPA 8321B	Acesulfame K	0.10	U	ug/L	P412698	
		2,4-D	0.0020	U	ug/L	P412902	
		AMPA	0.10	U	ug/L	P412698	
		2,4,5-T	0.0040	U	ug/L	P412902	
		Acetaminophen	0.0080	U	ug/L	P412902	
		Endothall	0.25	U	ug/L	P412698	
		Acetamiprid	0.020	U	ug/L	P412902	MS
		Glufosinate	0.10	U	ug/L	P412698	
		Glyphosate	0.10	U	ug/L	P412698	
		Afidopyropen	0.020	U	ug/L	P412902	RPD
		Sucralose	0.010	U	ug/L	P412698	
		Bentazon	8.0E-04	U	ug/L	P412902	
		Benzovindiflupyr	0.020	U	ug/L	P412902	
		Carbamazepine	0.0080	U	ug/L	P412902	
		Clothianidin	0.020	U	ug/L	P412902	
		Dinotefuran	0.020	U	ug/L	P412902	
		Diuron	0.020	U	ug/L	P412902	MS
		Fenuron	0.32	U	ug/L	P412902	
		Fluridone	0.0080	U	ug/L	P412902	
		Imazapyr	0.070		ug/L	P412902	
		Hydrocodone	0.0020	U	ug/L	P412902	
		Ibuprofen	0.020	U	ug/L	P412902	
		Imidacloprid	0.020	U	ug/L	P412902	
		Linuron	0.040	U	ug/L	P412902	
		Mandestrobin	0.020	U	ug/L	P412902	
		MCPP	0.0040	U	ug/L	P412902	
		Naproxen	0.0080	U	ug/L	P412902	
		Primidone	0.040	U	ug/L	P412902	
		Pyraclostrobin	0.020	U	ug/L	P412902	
		Silvex	0.0040	U	ug/L	P412902	
		Thiamethoxam	0.020	U	ug/L	P412902	
		Tolfenpyrad	0.020	U	ug/L	P412902	
		Triclopyr	0.0040	U	ug/L	P412902	
2321442	EPA 200.7 Rev. 4.4	Calcium	1.89		mg/L	P412803	
		Iron	1.35E+03		ug/L	P412803	
		Magnesium	0.67		mg/L	P412803	
		Potassium	0.30	U	mg/L	P412803	
		Sodium	4.1		mg/L	P412803	
		Strontium	9.4		ug/L	P412803	
		Tin	3.0	U	ug/L	P412803	
		Titanium	1.7	I	ug/L	P412803	
		Vanadium	2.0	U	ug/L	P412803	
		Zinc	6.4	I	ug/L	P412803	
	EPA 200.8 Rev. 5.4	Aluminum	614		ug/L	P412803	

Field ID: 19010125

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2321442	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P412803	
		Arsenic	0.36		ug/L	P412803	
		Barium	12.7		ug/L	P412803	
		Beryllium	0.049		ug/L	P412803	
		Boron**	12.2		ug/L	P412803	
		Cadmium	0.020	U	ug/L	P412803	
		Chromium	0.78	I	ug/L	P412803	
		Cobalt	0.324		ug/L	P412803	
		Copper	0.40	U	ug/L	P412803	
		Lead	0.76		ug/L	P412803	
		Manganese	11.2		ug/L	P412803	
		Molybdenum	0.15	U	ug/L	P412803	
		Nickel	0.69	I	ug/L	P412803	
		Selenium	0.20	U	ug/L	P412803	
		Silver	0.010	U	ug/L	P412803	
		Thallium	0.10	U	ug/L	P412803	
	SM 2340 B-2011	Hardness	7.5		mg/L	P412803	

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.

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 04/28/2022.

Sample Location: Unnamed Branch @ CR125

Collection Date/Time: 04/21/2022 13:50

Field ID: 19010123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2321443	EPA 200.7 Rev. 4.4	Calcium	5.76		mg/L	P412803	
		Iron	790		ug/L	P412803	
		Magnesium	2.42		mg/L	P412803	
		Potassium	1.2	I	mg/L	P412803	
		Sodium	5.6		mg/L	P412803	
		Strontium	18.4		ug/L	P412803	
		Tin	3.0	U	ug/L	P412803	
		Titanium	1.3	I	ug/L	P412803	
		Vanadium	2.0	U	ug/L	P412803	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P412803	
		Aluminum	215		ug/L	P412803	
		Antimony	0.050	U	ug/L	P412803	
		Arsenic	0.53		ug/L	P412803	
		Barium	19.6		ug/L	P412803	
		Beryllium	0.017	I	ug/L	P412803	
		Boron**	16.7		ug/L	P412803	
		Cadmium	0.020	U	ug/L	P412803	
		Chromium	0.48	I	ug/L	P412803	
		Cobalt	0.127		ug/L	P412803	
		Copper	0.40	U	ug/L	P412803	
		Lead	0.42		ug/L	P412803	
		Manganese	10.9		ug/L	P412803	
		Molybdenum	0.15	U	ug/L	P412803	
		Nickel	0.50	U	ug/L	P412803	
		Selenium	0.20	U	ug/L	P412803	
		Silver	0.010	U	ug/L	P412803	
		Thallium	0.10	U	ug/L	P412803	
		Hardness	24.3		mg/L	P412803	
	SM 2340 B-2011						

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P412785

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412786

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412803

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: P412803

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: P413251

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: P413253

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413279

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413270

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413027

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413392

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

Reference Method: EPA 8321B
Batch ID: P412698

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: P412902

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P412902

Component	Result	Code	Units
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: P413184

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

Reference Method: SM 2540 C-2011
Batch ID: P413206

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P413356

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P413189

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P413058

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: P412785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.2		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.8		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115
Strontium	103		P	85 - 115
Tin	97.8		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	94.0		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.7		P	85 - 115
Antimony	97.9		P	85 - 115
Arsenic	98.8		P	85 - 115
Barium	102		P	85 - 115
Beryllium	95.8		P	85 - 115
Boron	98.8		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	95.0		P	85 - 115
Cobalt	98.1		P	85 - 115
Copper	96.2		P	85 - 115
Lead	97.9		P	85 - 115
Manganese	95.6		P	85 - 115
Molybdenum	98.6		P	85 - 115
Nickel	99.1		P	85 - 115
Selenium	97.1		P	85 - 115
Silver	96.0		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413253

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413279

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413270

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: P413027

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: P413392

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

Reference Method: EPA 8321B
Batch ID: P412698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.6		P	40 - 150
AMPA	109		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	98.3		P	40 - 150
Sucralose	94.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P412902

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	68.2		P	40 - 150
2,4,5-T	71.8		P	40 - 150
Acetaminophen	83.8		P	30 - 150
Acetamiprid	59.2		P	40 - 150
Afidopyropen	40.9		P	40 - 150
Bentazon	65.7		P	30 - 150
Benzovindiflupyr	71.0		P	40 - 150
Carbamazepine	58.7		P	40 - 150
Clothianidin	79.2		P	40 - 150
Dinotefuran	98.2		P	40 - 150
Diuron	70.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P412902

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	81.3		P	40 - 150
Fluridone	68.5		P	40 - 150
Hydrocodone	91.3		P	40 - 150
Ibuprofen	60.6		P	40 - 150
Imazapyr	81.2		P	40 - 150
Imidacloprid	67.6		P	40 - 150
Linuron	56.7		P	40 - 150
Mandestrobin	60.2		P	40 - 150
MCPP	82.6		P	40 - 150
Naproxen	40.2		P	40 - 150
Primidone	83.1		P	40 - 150
Pyraclostrobin	65.1		P	40 - 150
Silvex	82.1		P	40 - 150
Thiamethoxam	78.4		P	40 - 150
Tolfenpyrad	40.5		P	30 - 150
Triclopyr	77.9		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P413184

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

Reference Method: SM 4500-F- C-2011
Batch ID: P413189

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

Reference Method: SM 5310 B-2011
Batch ID: P413058

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320498	Calcium	104		P	80 - 120
2320498	Iron	106	108	P/P	80 - 120
2320498	Magnesium	104	105	P/P	80 - 120
2320498	Potassium	104	104	P/P	80 - 120
2320498	Sodium	105	106	P/P	80 - 120
2320498	Strontium	107	108	P/P	80 - 120
2320498	Tin	98.9	102	P/P	80 - 120
2320498	Titanium	103	106	P/P	80 - 120
2320498	Vanadium	98.3	101	P/P	80 - 120
2320498	Zinc	100	103	P/P	80 - 120
2320499	Calcium	104		P	80 - 120
2320499	Iron	105		P	80 - 120
2320499	Magnesium	103		P	80 - 120
2320499	Potassium	103		P	80 - 120
2320499	Sodium	104		P	80 - 120
2320499	Strontium	109		P	80 - 120
2320499	Tin	103		P	80 - 120
2320499	Titanium	104		P	80 - 120
2320499	Vanadium	100		P	80 - 120
2320499	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320498	Aluminum	96.6	108	P/P	80 - 120
2320498	Antimony	98.3	99.2	P/P	80 - 120
2320498	Arsenic	97.3	97.0	P/P	80 - 120
2320498	Barium	102	103	P/P	80 - 120
2320498	Beryllium	92.1	95.2	P/P	80 - 120
2320498	Boron	101	102	P/P	80 - 120
2320498	Cadmium	97.2	98.9	P/P	80 - 120
2320498	Chromium	97.1	98.3	P/P	80 - 120
2320498	Cobalt	95.6	97.4	P/P	80 - 120
2320498	Copper	96.0	95.5	P/P	80 - 120
2320498	Lead	98.1	98.2	P/P	80 - 120
2320498	Manganese	95.3	98.7	P/P	80 - 120
2320498	Molybdenum	101	100	P/P	80 - 120
2320498	Nickel	96.8	98.6	P/P	80 - 120
2320498	Selenium	96.1	96.2	P/P	80 - 120
2320498	Silver	96.4	95.7	P/P	80 - 120
2320498	Thallium	102	103	P/P	80 - 120
2320499	Aluminum	97.4		P	80 - 120
2320499	Antimony	100		P	80 - 120
2320499	Arsenic	97.7		P	80 - 120
2320499	Barium	102		P	80 - 120
2320499	Beryllium	90.7		P	80 - 120
2320499	Boron	103		P	80 - 120
2320499	Cadmium	99.0		P	80 - 120
2320499	Chromium	97.5		P	80 - 120
2320499	Cobalt	96.9		P	80 - 120
2320499	Copper	94.6		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320499	Lead	98.1		P	80 - 120
2320499	Manganese	99.3		P	80 - 120
2320499	Molybdenum	101		P	80 - 120
2320499	Nickel	97.9		P	80 - 120
2320499	Selenium	98.0		P	80 - 120
2320499	Silver	95.7		P	80 - 120
2320499	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P413251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321410	Chloride	98.0		P	90 - 110
2321550	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P413253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321410	Sulfate	97.2		P	90 - 110
2321550	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P413279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322112	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P413270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321888	Kjeldahl Nitrogen	101	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P413027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321458	NO2NO3-N	98.0	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P413392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322551	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P412698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321191	Acesulfame K	99.4	97.0	P/P	40 - 150
2321191	Endothall	99.1	99.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P412698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321191	Glufosinate	106	97.2	P/P	40 - 150
2321191	Sucralose	109	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P412902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321475	2,4-D	56.7	54.2	P/P	40 - 150
2321475	2,4,5-T	73.4	72.9	P/P	40 - 150
2321475	Acetaminophen	116	109	P/P	30 - 150
2321475	Acetamiprid	30.5	23.6	F/F	40 - 150
2321475	Afidopyropen	60.3	43.2	P/P	40 - 150
2321475	Benzovindiflupyr	46.4	46.2	P/P	40 - 150
2321475	Carbamazepine	46.7	45.9	P/P	40 - 150
2321475	Clothianidin	57.7	57.2	P/P	40 - 150
2321475	Dinotefuran	93.5	92.2	P/P	40 - 150
2321475	Diuron	37.5	36.7	F/F	40 - 150
2321475	Fenuron	45.9	46.3	P/P	40 - 150
2321475	Fluridone	45.6	45.2	P/P	40 - 150
2321475	Hydrocodone	42.9	43.1	P/P	40 - 150
2321475	Ibuprofen	54.4	47.8	P/P	40 - 150
2321475	Imidacloprid	43.2	44.2	P/P	40 - 150
2321475	Linuron	44.7	43.8	P/P	40 - 150
2321475	Mandestrobin	49.5	50.6	P/P	40 - 150
2321475	MCPP	91.3	86.3	P/P	40 - 150
2321475	Naproxen	42.1	43.9	P/P	40 - 150
2321475	Primidone	54.6	53.5	P/P	40 - 150
2321475	Pyraclostrobin	62.9	62.7	P/P	40 - 150
2321475	Silvex	83.3	80.6	P/P	40 - 150
2321475	Thiamethoxam	40.9	42.0	P/P	40 - 150
2321475	Tolfenpyrad	36.0	33.7	P/P	30 - 150
2321475	Triclopyr	75.6	71.1	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P413189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320888	Fluoride	102	102	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P413058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2321328	Organic Carbon	99.1	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P412785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321456	Color (true)	0.774	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321433	Turbidity	1.81	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320498	Calcium	1.45	Spike	P	0 - 20
2320498	Iron	2.25	Spike	P	0 - 20
2320498	Magnesium	0.425	Spike	P	0 - 20
2320498	Potassium	0.0456	Spike	P	0 - 20
2320498	Sodium	0.749	Spike	P	0 - 20
2320498	Strontium	1.09	Spike	P	0 - 20
2320498	Tin	3.45	Spike	P	0 - 20
2320498	Titanium	3.22	Spike	P	0 - 20
2320498	Vanadium	2.83	Spike	P	0 - 20
2320498	Zinc	2.85	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320498	Aluminum	8.90	Spike	P	0 - 20
2320498	Antimony	0.944	Spike	P	0 - 20
2320498	Arsenic	0.312	Spike	P	0 - 20
2320498	Barium	0.939	Spike	P	0 - 20
2320498	Beryllium	2.98	Spike	P	0 - 20
2320498	Boron	0.145	Spike	P	0 - 20
2320498	Cadmium	1.80	Spike	P	0 - 20
2320498	Chromium	1.21	Spike	P	0 - 20
2320498	Cobalt	1.77	Spike	P	0 - 20
2320498	Copper	0.472	Spike	P	0 - 20
2320498	Lead	0.111	Spike	P	0 - 20
2320498	Manganese	1.75	Spike	P	0 - 20
2320498	Molybdenum	0.736	Spike	P	0 - 20
2320498	Nickel	1.85	Spike	P	0 - 20
2320498	Selenium	0.0804	Spike	P	0 - 20
2320498	Silver	0.741	Spike	P	0 - 20
2320498	Thallium	0.722	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321410	Chloride	0.248	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322112	Ammonia-N	0.130	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321888	Kjeldahl Nitrogen	5.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321458	NO2NO3-N	0.428	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322551	Total-P	0.386	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P412698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321191	Acesulfame K	2.49	Spike	P	0 - 30
2321191	AMPA	7.24	Spike	P	0 - 30
2321191	Endothall	0.311	Spike	P	0 - 30
2321191	Glufosinate	8.85	Spike	P	0 - 30
2321191	Glyphosate	1.11	Spike	P	0 - 30
2321191	Sucralose	3.42	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P412902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321475	2,4-D	3.97	Spike	P	0 - 30
2321475	2,4,5-T	0.644	Spike	P	0 - 30
2321475	Acetaminophen	5.98	Spike	P	0 - 30
2321475	Acetamidrid	25.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P412902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321475	Afidopyropen	32.9	Spike	F	0 - 30
2321475	Bentazon	0.652	Spike	P	0 - 30
2321475	Benzovindiflupyr	0.547	Spike	P	0 - 30
2321475	Carbamazepine	1.68	Spike	P	0 - 30
2321475	Clothianidin	0.790	Spike	P	0 - 30
2321475	Dinotefuran	1.43	Spike	P	0 - 30
2321475	Diuron	2.23	Spike	P	0 - 30
2321475	Fenuron	0.728	Spike	P	0 - 30
2321475	Fluridone	0.640	Spike	P	0 - 30
2321475	Hydrocodone	0.664	Spike	P	0 - 30
2321475	Ibuprofen	12.9	Spike	P	0 - 30
2321475	Imazapyr	0.285	Spike	P	0 - 30
2321475	Imidacloprid	2.41	Spike	P	0 - 30
2321475	Linuron	1.93	Spike	P	0 - 30
2321475	Mandestrobin	2.21	Spike	P	0 - 30
2321475	MCPP	5.70	Spike	P	0 - 30
2321475	Naproxen	4.02	Spike	P	0 - 30
2321475	Primidone	2.04	Spike	P	0 - 30
2321475	Pyraclostrobin	0.253	Spike	P	0 - 30
2321475	Silvex	3.38	Spike	P	0 - 30
2321475	Thiamethoxam	2.76	Spike	P	0 - 30
2321475	Tolfenpyrad	6.67	Spike	P	0 - 30
2321475	Triclopyr	6.10	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P413184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320888	Total Alkalinity	0.974	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P413206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321337	TDS	1.08	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P413189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320888	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P413058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2321328	Organic Carbon	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2321440

Field Sample ID: 19010125

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	43.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.5	P	30 - 160
EPA 8321B	Diuron-d6	36.0	P	30 - 160
EPA 8321B	Endothall-d6	85.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	46.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	48.7	P	30 - 160
EPA 8321B	Primidone-d5	72.9	P	30 - 160
EPA 8321B	Sucralose-d6	86.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A111643

Included Lab Sample IDs: 2321433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.1	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111646

Included Lab Sample IDs: 2321433

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

Reference Method: EPA 8321B

Run ID: A111654

Included Lab Sample IDs: 2321440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.6	96.0	P/P	60 - 160
Sucralose	96.5	94.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111655

Included Lab Sample IDs: 2321440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.1	101	P/P	60 - 160
Endothall	92.1	92.0	P/P	60 - 160
Glufosinate	94.9	104	P/P	60 - 160
Glyphosate	95.6	101	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111715

Included Lab Sample IDs: 2321433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.0	99.8	P/P	90 - 110
Sulfate	99.8	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111744

Included Lab Sample IDs: 2321441, 2321442, 2321443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.1	99.1	P/P	90 - 110
Antimony	99.3	101	P/P	90 - 110
Arsenic	97.2	97.4	P/P	90 - 110
Barium	97.9	99.1	P/P	90 - 110
Beryllium	95.0	94.8	P/P	90 - 110
Boron	98.7	97.6	P/P	90 - 110
Cadmium	97.8	99.1	P/P	90 - 110
Chromium	96.3	96.9	P/P	90 - 110
Cobalt	95.3	97.1	P/P	90 - 110
Copper	95.8	97.3	P/P	90 - 110
Lead	95.2	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111744

Included Lab Sample IDs: 2321441, 2321442, 2321443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	96.9	98.2	P/P	90 - 110
Molybdenum	97.3	97.6	P/P	90 - 110
Nickel	97.0	98.6	P/P	90 - 110
Selenium	97.9	97.9	P/P	90 - 110
Silver	97.2	97.7	P/P	90 - 110
Thallium	95.5	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111756

Included Lab Sample IDs: 2321434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A111772

Included Lab Sample IDs: 2321434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111826

Included Lab Sample IDs: 2321433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	96.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111826

Included Lab Sample IDs: 2321433

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111857

Included Lab Sample IDs: 2321441, 2321442, 2321443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Strontium	106	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111857

Included Lab Sample IDs: 2321441, 2321442, 2321443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	107	106	P/P	90 - 110
Tin	101	99.3	P/P	90 - 110
Tin	99.9	101	P/P	90 - 110
Titanium	103	103	P/P	90 - 110
Titanium	103	99.8	P/P	90 - 110
Vanadium	103	103	P/P	90 - 110
Vanadium	103	102	P/P	90 - 110
Zinc	102	102	P/P	90 - 110
Zinc	102	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111875

Included Lab Sample IDs: 2321434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111876

Included Lab Sample IDs: 2321440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.2	104	P/P	50 - 150
2,4,5-T	96.7	84.9	P/P	50 - 150
Acetaminophen	99.0	106	P/P	60 - 160
Acetamiprid	106	105	P/P	50 - 150
Afidopyropen	79.8	88.0	P/P	50 - 150
Bentazon	97.5	97.9	P/P	50 - 160
Benzovindiflupyr	101	101	P/P	50 - 150
Carbamazepine	100	101	P/P	60 - 150
Clothianidin	83.0	89.0	P/P	60 - 150
Dinotefuran	103	103	P/P	50 - 150
Diuron	105	101	P/P	60 - 160
Fenuron	103	102	P/P	60 - 150
Fluridone	103	105	P/P	60 - 160
Hydrocodone	100	107	P/P	60 - 150
Ibuprofen	85.8	114	P/P	50 - 160
Imazapyr	103	111	P/P	50 - 150
Imidacloprid	94.0	94.6	P/P	60 - 150
Linuron	96.4	102	P/P	60 - 150
Mandestrobin	98.1	103	P/P	50 - 150
MCPP	93.7	93.5	P/P	50 - 150
Naproxen	85.4	79.8	P/P	50 - 160
Primidone	81.2	87.2	P/P	60 - 150
Pyraclostrobin	91.8	103	P/P	60 - 150
Silvex	100	99.9	P/P	50 - 150
Thiamethoxam	89.9	98.6	P/P	50 - 150
Tolfenpyrad	70.7	75.2	P/P	60 - 150
Triclopyr	89.9	100	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111987

Included Lab Sample IDs: 2321434

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112016

Included Lab Sample IDs: 2321434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.4	106	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)	98.2					0.774	
EPA 180.1 Rev. 2.0	Turbidity	95.8					1.81	
EPA 200.7 Rev. 4.4	Calcium	101	104	104				1.45
	Iron	102	106	108	105			2.25
	Magnesium	102	104	105	103			0.425
	Potassium	101	104	104	103			0.0456
	Sodium	103	105	106	104			0.749
	Strontium	103	107	108	109			1.09
	Tin	97.8	98.9	102	103			3.45
	Titanium	100	103	106	104			3.22
	Vanadium	94.0	98.3	101	100			2.83
	Zinc	98.4	100	103	103			2.85
EPA 200.8 Rev. 5.4	Aluminum	97.7	96.6	108	97.4			8.90
	Antimony	97.9	98.3	99.2	100			0.944
	Arsenic	98.8	97.3	97.0	97.7			0.312
	Barium	102	102	103	102			0.939
	Beryllium	95.8	92.1	95.2	90.7			2.98
	Boron	98.8	101	102	103			0.145
	Cadmium	98.7	97.2	98.9	99.0			1.80
	Chromium	95.0	97.1	98.3	97.5			1.21
	Cobalt	98.1	95.6	97.4	96.9			1.77
	Copper	96.2	96.0	95.5	94.6			0.472
	Lead	97.9	98.1	98.2	98.1			0.111
	Manganese	95.6	95.3	98.7	99.3			1.75
	Molybdenum	98.6	101	100	101			0.736
	Nickel	99.1	96.8	98.6	97.9			1.85
	Selenium	97.1	96.1	96.2	98.0			0.0804
	Silver	96.0	96.4	95.7	95.7			0.741
	Thallium	101	102	103	103			0.722
EPA 300.0 Rev. 2.1	Chloride	99.1	98.0	97.6			0.248	
	Sulfate	98.0	97.2	97.4				
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	100	100				0.130
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	101	110				5.45
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.0	97.6				0.428
EPA 365.1 Rev. 2.0	Total-P	102	101	102				0.386
EPA 8321B	2,4-D	68.2	56.7	54.2				3.97
	2,4,5-T	71.8	73.4	72.9				0.644
	Acesulfame K	98.6	99.4	97.0				2.49
	Acetaminophen	83.8	116	109				5.98
	Acetamiprid	59.2	30.5	23.6				25.7
	Afidopyropen	40.9	60.3	43.2				32.9
	AMPA	109						7.24
	Bentazon	65.7						0.652
	Benzovindiflupyr	71.0	46.4	46.2				0.547
	Carbamazepine	58.7	46.7	45.9				1.68
	Clothianidin	79.2	57.7	57.2				0.790
	Dinotefuran	98.2	93.5	92.2				1.43
	Diuron	70.9	37.5	36.7				2.23
	Endothall	104	99.1	99.4				0.311
	Fenuron	81.3	45.9	46.3				0.728
	Fluridone	68.5	45.6	45.2				0.640
	Glufosinate	110	106	97.2				8.85
	Glyphosate	98.3						1.11
	Hydrocodone	91.3	42.9	43.1				0.664

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Ibuprofen	60.6	54.4	47.8		12.9
	Imazapyr	81.2				0.285
	Imidacloprid	67.6	43.2	44.2		2.41
	Linuron	56.7	44.7	43.8		1.93
	Mandestrobin	60.2	49.5	50.6		2.21
	MCPP	82.6	91.3	86.3		5.70
	Naproxen	40.2	42.1	43.9		4.02
	Primidone	83.1	54.6	53.5		2.04
	Pyraclostrobin	65.1	62.9	62.7		0.253
	Silvex	82.1	83.3	80.6		3.38
	Sucralose	94.1	109	114		3.42
	Thiamethoxam	78.4	40.9	42.0		2.76
	Tolfenpyrad	40.5	36.0	33.7		6.67
	Triclopyr	77.9	75.6	71.1		6.10
SM 2320 B-2011	Total Alkalinity	101			0.974	
SM 2540 C-2011	TDS				1.08	
SM 4500-F- C-2011	Fluoride	101	102	102		0.0
SM 5310 B-2011	Organic Carbon	95.6	99.1	101		1.50

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2321433
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2321433
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2321441, 2321442, 2321443
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2321441, 2321442, 2321443
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2321433
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2321433
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2321434
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2321434
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2321434
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2321434
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2321440
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2321433
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2321441, 2321442, 2321443
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2321433
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2321433
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2321433
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2321434

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	04/22/2022			04/22/2022 14:30	Samantha L Bates	2321433
EPA 180.1 Rev. 2.0	04/22/2022			04/22/2022 13:43	Anna M. Plaviak	2321433
EPA 200.7 Rev. 4.4	04/22/2022	04/25/2022 10:55	Megan Whitefoot	05/02/2022 19:04	Josef B Mick	2321441
	04/22/2022	04/25/2022 10:55	Megan Whitefoot	05/02/2022 19:43	Josef B Mick	2321442
	04/22/2022	04/25/2022 10:55	Megan Whitefoot	05/02/2022 19:51	Josef B Mick	2321443
EPA 200.8 Rev. 5.4	04/22/2022	04/25/2022 10:55	Megan Whitefoot	04/27/2022 17:17	Alexander Thompson	2321441
	04/22/2022	04/25/2022 10:55	Megan Whitefoot	04/27/2022 17:26	Alexander Thompson	2321442
	04/22/2022	04/25/2022 10:55	Megan Whitefoot	04/27/2022 17:35	Alexander Thompson	2321443
EPA 300.0 Rev. 2.1	04/22/2022			04/29/2022 17:54	James L Waggeberby	2321433
EPA 350.1 Rev. 2.0	04/22/2022			05/03/2022 11:49	Ping Hua	2321434
EPA 351.2 Rev. 2.0	04/22/2022	05/04/2022 16:20	Alexandra J Mattheus	05/09/2022 14:03	Samantha L Bates	2321434
EPA 353.2 Rev. 2.0	04/22/2022			04/28/2022 10:03	Beverly Y. Sanders	2321434
EPA 365.1 Rev. 2.0	04/22/2022	05/05/2022 14:45	Simonne.V. Calhoun	05/06/2022 16:15	Sarah A Nixon	2321434
EPA 8321B	04/22/2022	04/22/2022 12:00	Manjita Shrestha	04/23/2022 06:27	Manjita Shrestha	2321440
	04/22/2022	04/22/2022 12:00	Manjita Shrestha	04/24/2022 06:16	Manjita Shrestha	2321440
	04/22/2022	04/27/2022 09:00	Hoor Shaik	04/28/2022 11:18	Juyoung Kim	2321440
	04/22/2022	04/27/2022 09:00	Hoor Shaik	05/02/2022 16:51	Juyoung Kim	2321440
SM 2320 B-2011	04/22/2022			04/30/2022 20:11	Dale L. Simmons	2321433
SM 2340 B-2011	04/22/2022			05/02/2022 19:04	Josef B Mick	2321441
	04/22/2022			05/02/2022 19:43	Josef B Mick	2321442
	04/22/2022			05/02/2022 19:51	Josef B Mick	2321443
SM 2540 C-2011	04/22/2022			04/26/2022 15:06	Yijie Li	2321433
SM 2540 D-2011	04/22/2022			04/26/2022 15:06	Yijie Li	2321433
SM 4500-F- C-2011	04/22/2022			04/30/2022 20:11	Dale L. Simmons	2321433
SM 5310 B-2011	04/22/2022			04/28/2022 03:34	Khloe J Berg	2321434