

Chemical Analysis Report

NE-DIST-2022-06-08-01

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

Event Description: **Nassau North 2**
Request ID: **RQ-2022-06-06-31**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 30-JUN-2022 10:05



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: MILLS CREEK AT US 301/US1

Collection Date/Time: 06/07/2022 12:15

Field ID: 19020048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333124	EPA 200.7 Rev. 4.4	Calcium	5.11		mg/L	P415009	
		Iron	1.49E+03		ug/L	P415009	
		Magnesium	1.61		mg/L	P415009	
		Potassium	1.3		mg/L	P415009	
		Sodium	6.7		mg/L	P415009	
		Strontium	27.1		ug/L	P415009	
		Tin	3.0	U	ug/L	P415009	
		Titanium	1.6	I	ug/L	P415009	
		Vanadium	2.0	U	ug/L	P415009	
	EPA 200.8 Rev. 5.4	Zinc	9.3	I	ug/L	P415009	
		Aluminum	394		ug/L	P415208	
		Antimony	0.050	U	ug/L	P415009	
		Arsenic	0.66		ug/L	P415009	
		Barium	20.6		ug/L	P415009	
		Beryllium	0.029	I	ug/L	P415009	
		Boron**	21.0		ug/L	P415009	
		Cadmium	0.020	U	ug/L	P415009	
		Chromium	0.51	I	ug/L	P415009	
		Cobalt	0.335		ug/L	P415009	
		Copper	2.24		ug/L	P415009	
		Lead	0.56		ug/L	P415009	
		Manganese	21.8		ug/L	P415009	
		Molybdenum	0.15	U	ug/L	P415009	
		Nickel	0.63	I	ug/L	P415009	
		Selenium	0.20	U	ug/L	P415009	
		Silver	0.010	U	ug/L	P415009	
		Thallium	0.10	U	ug/L	P415009	
	SM 2340 B-2011	Hardness	19.4		mg/L	P415009	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The lead result was confirmed in the undigested sample on 06/13/2022.

Sample Location: PIGEON CREEK @ ANDREWS RD

Collection Date/Time: 06/07/2022 11:10

Field ID: 19010098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333121	EPA 8321B	2,4-D	0.0020	U	ug/L	P414950	
		Acesulfame K	0.10	U	ug/L	P414891	
		2,4,5-T	0.0040	U	ug/L	P414950	
		AMPA	0.10	U	ug/L	P414891	MS
		Acetaminophen	0.0080	U	ug/L	P414950	
		Acetamiprid	0.0020	U	ug/L	P414950	
		Endothall	0.25	U	ug/L	P414891	
		Glufosinate	0.10	U	ug/L	P414891	
		Glyphosate	0.10	U	ug/L	P414891	
		Afidopyropen	0.0020	U	ug/L	P414950	
		Bentazon	8.0E-04	U	ug/L	P414950	
		Sucralose	0.020	I	ug/L	P414891	
		Benzovindiflupyr	0.0020	U	ug/L	P414950	
		Carbamazepine	8.0E-04	U	ug/L	P414950	
		Clothianidin	0.0020	U	ug/L	P414950	
		Dinotefuran	0.0020	U	ug/L	P414950	
		Diuron	0.0020	U	ug/L	P414950	
		Fenuron	0.032	U	ug/L	P414950	
		Fluridone	8.0E-04	U	ug/L	P414950	
		Imazapyr	0.14		ug/L	P414950	
		Hydrocodone	0.0020	U	ug/L	P414950	
		Ibuprofen	0.080	U	ug/L	P414950	
		Imidacloprid	0.0020	U	ug/L	P414950	
		Linuron	0.0040	U	ug/L	P414950	
		Mandestrobin	0.0020	U	ug/L	P414950	
		MCPP	0.0040	U	ug/L	P414950	
		Naproxen	0.0080	U	ug/L	P414950	
		Primidone	0.0040	U	ug/L	P414950	
		Pyraclostrobin	0.0020	U	ug/L	P414950	
		Silvex	0.0040	U	ug/L	P414950	
		Thiamethoxam	0.0020	U	ug/L	P414950	
		Tolfenpyrad	0.0020	U	ug/L	P414950	
		Triclopyr	0.0040	U	ug/L	P414950	
2333126	EPA 200.7 Rev. 4.4	Calcium	1.98		mg/L	P415009	
		Iron	2.93E+03		ug/L	P415009	
		Magnesium	0.70		mg/L	P415009	
		Potassium	0.50	I	mg/L	P415009	
		Sodium	6.5		mg/L	P415009	
		Strontium	11.5		ug/L	P415009	
		Tin	3.0	U	ug/L	P415009	
		Titanium	0.96	I	ug/L	P415009	
		Vanadium	2.0	U	ug/L	P415009	
		Zinc	5.0	U	ug/L	P415009	
	EPA 200.8 Rev. 5.4	Aluminum	430		ug/L	P415208	

Field ID: 19010098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333126	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P415009	
		Arsenic	0.88		ug/L	P415009	
		Barium	12.5		ug/L	P415009	
		Beryllium	0.019	I	ug/L	P415009	
		Boron**	18.5		ug/L	P415009	
		Cadmium	0.020	U	ug/L	P415009	
		Chromium	0.46	I	ug/L	P415009	
		Cobalt	0.189		ug/L	P415009	
		Copper	0.40	U	ug/L	P415009	
		Lead	0.67		ug/L	P415009	
		Manganese	9.48		ug/L	P415009	
		Molybdenum	0.15	U	ug/L	P415009	
		Nickel	0.50	U	ug/L	P415009	
		Selenium	0.20	U	ug/L	P415009	
		Silver	0.010	U	ug/L	P415009	
		Thallium	0.10	U	ug/L	P415009	
	SM 2340 B-2011	Hardness	7.8		mg/L	P415009	

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The lead result was confirmed in the undigested sample on 06/13/2022.

Sample Location: PIGEON CREEK AT US 1

Collection Date/Time: 06/07/2022 10:45

Field ID: 19010099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333102	DEP SOP: NU-094-1	Color (true)**	180		PCU	P414911	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P414916	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P415411	
		Sulfate	3.2		mg SO4/L	P415416	
	SM 2320 B-2011	Total Alkalinity	9.4		mg CaCO3/L	P415388	
	SM 2540 C-2011	TDS	51		mg/L	P415243	
	SM 2540 D-2011	TSS	4	I	mg/L	P415246	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P415393	
2333103	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P415564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P415099	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P415721	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P415065	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P415135	
2333120	EPA 8321B	2,4-D	0.0020	U	ug/L	P414950	
		Acesulfame K	0.10	U	ug/L	P414891	
		2,4,5-T	0.0040	U	ug/L	P414950	
		AMPA	0.10	U	ug/L	P414891	MS
		Acetaminophen	0.0080	U	ug/L	P414950	
		Acetamiprid	0.0020	U	ug/L	P414950	
		Endothall	0.25	U	ug/L	P414891	
		Glufosinate	0.10	U	ug/L	P414891	
		Glyphosate	0.10	U	ug/L	P414891	
		Afidopyropen	0.0020	U	ug/L	P414950	
		Bentazon	8.0E-04	U	ug/L	P414950	
		Sucralose	0.22		ug/L	P414891	
		Benzovindiflupyr	0.0020	U	ug/L	P414950	
		Carbamazepine	8.0E-04	U	ug/L	P414950	
		Clothianidin	0.0020	U	ug/L	P414950	
		Dinotefuran	0.0020	U	ug/L	P414950	
		Diuron	0.0020	U	ug/L	P414950	
		Fenuron	0.032	U	ug/L	P414950	
		Fluridone	8.0E-04	U	ug/L	P414950	
		Imazapyr	0.031		ug/L	P414950	
		Hydrocodone	0.0020	U	ug/L	P414950	
		Ibuprofen	0.080	U	ug/L	P414950	
		Imidacloprid	0.0020	U	ug/L	P414950	
		Linuron	0.0040	U	ug/L	P414950	
		Mandestrobin	0.0020	U	ug/L	P414950	
		MCPP	0.0040	U	ug/L	P414950	
		Naproxen	0.0080	U	ug/L	P414950	
		Primidone	0.0040	U	ug/L	P414950	
		Pyraclostrobin	0.0020	U	ug/L	P414950	
		Silvex	0.0040	U	ug/L	P414950	
		Thiamethoxam	0.0020	U	ug/L	P414950	

Field ID: 19010099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333120	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P414950	
		Triclopyr	0.0040	U	ug/L	P414950	
2333125	EPA 200.7 Rev. 4.4	Calcium	5.37		mg/L	P415009	
		Iron	880		ug/L	P415009	
		Magnesium	1.03		mg/L	P415009	
		Potassium	1.0	I	mg/L	P415009	
		Sodium	5.5		mg/L	P415009	
		Strontium	20.2		ug/L	P415009	
		Tin	3.0	U	ug/L	P415009	
		Titanium	2.2	I	ug/L	P415009	
		Vanadium	2.0	U	ug/L	P415009	
		Zinc	5.0	U	ug/L	P415009	
	EPA 200.8 Rev. 5.4	Aluminum	272		ug/L	P415208	
		Antimony	0.050	U	ug/L	P415009	
		Arsenic	0.47		ug/L	P415009	
		Barium	19.4		ug/L	P415009	
		Beryllium	0.016	I	ug/L	P415009	
		Boron**	20.0		ug/L	P415009	
		Cadmium	0.020	U	ug/L	P415009	
		Chromium	0.40	U	ug/L	P415009	
		Cobalt	0.078	I	ug/L	P415009	
		Copper	0.40	U	ug/L	P415009	
		Lead	0.40		ug/L	P415009	
		Manganese	5.44		ug/L	P415009	
		Molybdenum	0.15	U	ug/L	P415009	
		Nickel	0.50	U	ug/L	P415009	
		Selenium	0.20	U	ug/L	P415009	
		Silver	0.010	U	ug/L	P415009	
		Thallium	0.10	U	ug/L	P415009	
	SM 2340 B-2011	Hardness	17.7		mg/L	P415009	

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Creek draining former Hampton lake 100m above rd

Collection Date/Time: 06/07/2022 10:20

Field ID: G4NE0292

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333127	EPA 200.7 Rev. 4.4	Calcium	5.59		mg/L	P415009	
		Iron	930		ug/L	P415009	
		Magnesium	1.16		mg/L	P415009	
		Potassium	0.79	I	mg/L	P415009	
		Sodium	5.4		mg/L	P415009	
		Strontium	21.1		ug/L	P415009	
		Tin	3.0	U	ug/L	P415009	
		Titanium	2.2	I	ug/L	P415009	
		Vanadium	2.0	U	ug/L	P415009	
		Zinc	5.0	U	ug/L	P415009	
	EPA 200.8 Rev. 5.4	Aluminum	257		ug/L	P415208	
		Antimony	0.050	U	ug/L	P415009	
		Arsenic	0.52		ug/L	P415009	
		Barium	19.3		ug/L	P415009	
		Beryllium	0.019	I	ug/L	P415009	
		Boron**	17.0		ug/L	P415009	
		Cadmium	0.020	U	ug/L	P415009	
		Chromium	0.42	I	ug/L	P415009	
		Cobalt	0.091		ug/L	P415009	
		Copper	0.40	U	ug/L	P415009	
		Lead	0.48		ug/L	P415009	
		Manganese	5.74		ug/L	P415009	
		Molybdenum	0.15	U	ug/L	P415009	
		Nickel	0.50	U	ug/L	P415009	
		Selenium	0.20	U	ug/L	P415009	
		Silver	0.010	U	ug/L	P415009	
		Thallium	0.10	U	ug/L	P415009	
	SM 2340 B-2011	Hardness	18.7		mg/L	P415009	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P414911

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414916

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415009

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: P415009

Component	Result	Code	Units
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 200.8 Rev. 5.4
Batch ID: P415208

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415411

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415416

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415099

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415721

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415065

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

Reference Method: EPA 8321B
Batch ID: P414891

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: P414950

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P414950

Component	Result	Code	Units
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	0.080	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: P415388

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO3/L

Reference Method: SM 2540 C-2011

Batch ID: P415243

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P415246

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P415393

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P415135

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: P414911

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: P414916

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	106		P	85 - 115
Sodium	102		P	85 - 115
Strontium	103		P	85 - 115
Tin	100		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	94.3		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	99.7		P	85 - 115
Arsenic	101		P	85 - 115
Barium	103		P	85 - 115
Beryllium	96.5		P	85 - 115
Boron	106		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	95.9		P	85 - 115
Cobalt	99.1		P	85 - 115
Copper	99.1		P	85 - 115
Lead	101		P	85 - 115
Manganese	96.6		P	85 - 115
Molybdenum	99.2		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.6		P	85 - 115
Silver	99.4		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415411

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415416

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415721

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415065

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

Reference Method: EPA 8321B
Batch ID: P414891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
AMPA	97.9		P	40 - 150
Endothall	72.4		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	92.8		P	40 - 150
Sucralose	96.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P414950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.3		P	40 - 150
2,4,5-T	82.6		P	40 - 150
Acetaminophen	81.6		P	30 - 150
Acetamiprid	69.6		P	40 - 150
Afidopyropen	59.1		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P414950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	93.8		P	30 - 150
Benzovindiflupyr	52.5		P	40 - 150
Carbamazepine	66.1		P	40 - 150
Clothianidin	76.6		P	40 - 150
Dinotefuran	78.4		P	40 - 150
Diuron	66.8		P	40 - 150
Fenuron	72.1		P	40 - 150
Fluridone	75.0		P	40 - 150
Hydrocodone	75.3		P	40 - 150
Ibuprofen	84.2		P	40 - 150
Imazapyr	84.7		P	40 - 150
Imidacloprid	70.8		P	40 - 150
Linuron	61.3		P	40 - 150
Mandestrobin	53.5		P	40 - 150
MCPP	91.7		P	40 - 150
Naproxen	78.9		P	40 - 150
Primidone	81.6		P	40 - 150
Pyraclostrobin	50.9		P	40 - 150
Silvex	75.8		P	40 - 150
Thiamethoxam	73.9		P	40 - 150
Tolfenpyrad	40.5		P	30 - 150
Triclopyr	84.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P415388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P415393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011

Batch ID: P415135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P415009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332350	Calcium	101		P	80 - 120
2332350	Iron	102	105	P/P	80 - 120
2332350	Magnesium	101	102	P/P	80 - 120
2332350	Potassium	103	104	P/P	80 - 120
2332350	Sodium	101		P	80 - 120
2332350	Strontium	104	104	P/P	80 - 120
2332350	Tin	97.9	99.3	P/P	80 - 120
2332350	Titanium	104	113	P/P	80 - 120
2332350	Vanadium	96.1	96.5	P/P	80 - 120
2332350	Zinc	98.1	98.9	P/P	80 - 120
2332352	Calcium	98.8		P	80 - 120
2332352	Iron	103		P	80 - 120
2332352	Magnesium	104		P	80 - 120
2332352	Potassium	111		P	80 - 120
2332352	Sodium	102		P	80 - 120
2332352	Strontium	105		P	80 - 120
2332352	Tin	103		P	80 - 120
2332352	Titanium	101		P	80 - 120
2332352	Vanadium	97.5		P	80 - 120
2332352	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332350	Antimony	97.7	100	P/P	80 - 120
2332350	Arsenic	98.9	101	P/P	80 - 120
2332350	Barium	101	104	P/P	80 - 120
2332350	Beryllium	96.6	98.6	P/P	80 - 120
2332350	Boron	107	108	P/P	80 - 120
2332350	Cadmium	98.1	101	P/P	80 - 120
2332350	Chromium	99.2	100	P/P	80 - 120
2332350	Cobalt	98.1	99.3	P/P	80 - 120
2332350	Copper	97.7	99.0	P/P	80 - 120
2332350	Lead	100	102	P/P	80 - 120
2332350	Molybdenum	99.7	101	P/P	80 - 120
2332350	Nickel	100	102	P/P	80 - 120
2332350	Selenium	96.7	97.7	P/P	80 - 120
2332350	Silver	98.5	99.2	P/P	80 - 120
2332350	Thallium	102	105	P/P	80 - 120
2332352	Antimony	101		P	80 - 120
2332352	Arsenic	100		P	80 - 120
2332352	Barium	104		P	80 - 120
2332352	Beryllium	95.3		P	80 - 120
2332352	Boron	105		P	80 - 120
2332352	Cadmium	101		P	80 - 120
2332352	Chromium	97.4		P	80 - 120
2332352	Cobalt	99.4		P	80 - 120
2332352	Copper	100		P	80 - 120
2332352	Lead	102		P	80 - 120
2332352	Manganese	99.7		P	80 - 120
2332352	Molybdenum	101		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332352	Nickel	102		P	80 - 120
2332352	Selenium	98.4		P	80 - 120
2332352	Silver	100		P	80 - 120
2332352	Thallium	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332374	Aluminum	102	99.5	P/P	80 - 120
2333022	Aluminum	109		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333069	Chloride	101		P	90 - 110
2333176	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333069	Sulfate	101		P	90 - 110
2333176	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P415564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333047	Ammonia-N	94.6	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P415099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332730	Kjeldahl Nitrogen	104	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P415721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332480	NO2NO3-N	100	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P415065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333149	Total-P	105	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P414891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332928	Acesulfame K	82.6	84.8	P/P	40 - 150
2332928	AMPA	37.9	37.6	F/F	40 - 150
2332928	Endothall	89.4	86.8	P/P	40 - 150
2332928	Glufosinate	50.9	53.8	P/P	40 - 150
2332928	Glyphosate	48.7	52.1	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333123	2,4-D	121	121	P/P	40 - 150
2333123	2,4,5-T	109	112	P/P	40 - 150
2333123	Acetaminophen	121	123	P/P	30 - 150
2333123	Acetamiprid	75.6	74.9	P/P	40 - 150
2333123	Afidopyropen	63.1	61.5	P/P	30 - 150
2333123	Benzovindiflupyr	57.5	61.6	P/P	40 - 150
2333123	Carbamazepine	91.4	93.5	P/P	40 - 150
2333123	Clothianidin	104	100	P/P	40 - 150
2333123	Dinotefuran	126	124	P/P	40 - 150
2333123	Diuron	80.8	85.3	P/P	40 - 150
2333123	Fenuron	76.9	78.4	P/P	40 - 150
2333123	Fluridone	87.4	85.6	P/P	40 - 150
2333123	Hydrocodone	93.2	98.2	P/P	40 - 150
2333123	Ibuprofen	96.3	92.1	P/P	40 - 150
2333123	Imidacloprid	126	124	P/P	40 - 150
2333123	Linuron	74.7	71.0	P/P	40 - 150
2333123	Mandestrobin	61.1	62.6	P/P	40 - 150
2333123	MCP	131	133	P/P	40 - 150
2333123	Naproxen	113	94.3	P/P	40 - 150
2333123	Primidone	109	106	P/P	40 - 150
2333123	Pyraclostrobin	57.0	57.9	P/P	40 - 150
2333123	Silvex	109	104	P/P	40 - 150
2333123	Thiamethoxam	126	126	P/P	40 - 150
2333123	Tolfenpyrad	45.8	44.6	P/P	30 - 150
2333123	Triclopyr	123	126	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P415393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333178	Fluoride	103	103	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P415135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332876	Organic Carbon	90.0	93.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P414911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333107	Color (true)	2.31	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332874	Turbidity	5.39	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332350	Calcium	2.31	Spike	P	0 - 20
2332350	Iron	2.61	Spike	P	0 - 20
2332350	Magnesium	1.02	Spike	P	0 - 20
2332350	Potassium	0.864	Spike	P	0 - 20
2332350	Sodium	1.16	Spike	P	0 - 20
2332350	Strontium	0.0407	Spike	P	0 - 20
2332350	Tin	1.39	Spike	P	0 - 20
2332350	Titanium	7.49	Spike	P	0 - 20
2332350	Vanadium	0.405	Spike	P	0 - 20
2332350	Zinc	0.759	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332350	Antimony	2.59	Spike	P	0 - 20
2332350	Arsenic	2.27	Spike	P	0 - 20
2332350	Barium	2.05	Spike	P	0 - 20
2332350	Beryllium	1.81	Spike	P	0 - 20
2332350	Boron	1.45	Spike	P	0 - 20
2332350	Cadmium	3.11	Spike	P	0 - 20
2332350	Chromium	1.31	Spike	P	0 - 20
2332350	Cobalt	1.23	Spike	P	0 - 20
2332350	Copper	1.23	Spike	P	0 - 20
2332350	Lead	1.43	Spike	P	0 - 20
2332350	Manganese	1.35	Spike	P	0 - 20
2332350	Molybdenum	0.894	Spike	P	0 - 20
2332350	Nickel	1.17	Spike	P	0 - 20
2332350	Selenium	1.05	Spike	P	0 - 20
2332350	Silver	0.742	Spike	P	0 - 20
2332350	Thallium	2.48	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332374	Aluminum	2.15	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333069	Chloride	0.739	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333047	Ammonia-N	1.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332730	Kjeldahl Nitrogen	6.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332480	NO2NO3-N	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333149	Total-P	0.222	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P414891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332928	Acesulfame K	2.59	Spike	P	0 - 30
2332928	AMPA	0.419	Spike	P	0 - 30
2332928	Endothall	2.91	Spike	P	0 - 30
2332928	Glufosinate	5.63	Spike	P	0 - 30
2332928	Glyphosate	3.45	Spike	P	0 - 30
2332928	Sucralose	14.5	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P414950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333123	2,4-D	0.143	Spike	P	0 - 30
2333123	2,4,5-T	2.94	Spike	P	0 - 30
2333123	Acetaminophen	1.80	Spike	P	0 - 30
2333123	Acetamiprid	0.910	Spike	P	0 - 30
2333123	Afidopyropen	2.55	Spike	P	0 - 30
2333123	Bentazon	2.42	Spike	P	0 - 30
2333123	Benzovindiflupyr	6.97	Spike	P	0 - 30
2333123	Carbamazepine	1.86	Spike	P	0 - 30
2333123	Clothianidin	2.70	Spike	P	0 - 30
2333123	Dinotefuran	1.81	Spike	P	0 - 30
2333123	Diuron	4.85	Spike	P	0 - 30
2333123	Fenuron	1.95	Spike	P	0 - 30
2333123	Fluridone	1.68	Spike	P	0 - 30
2333123	Hydrocodone	5.26	Spike	P	0 - 30
2333123	Ibuprofen	4.41	Spike	P	0 - 30
2333123	Imazapyr	7.54	Spike	P	0 - 30
2333123	Imidacloprid	0.924	Spike	P	0 - 30
2333123	Linuron	5.09	Spike	P	0 - 30
2333123	Mandestrobin	2.36	Spike	P	0 - 30
2333123	MCPP	1.41	Spike	P	0 - 30
2333123	Naproxen	18.1	Spike	P	0 - 30
2333123	Primidone	3.41	Spike	P	0 - 30
2333123	Pyraclostrobin	1.57	Spike	P	0 - 30
2333123	Silvex	5.21	Spike	P	0 - 30
2333123	Thiamethoxam	0.388	Spike	P	0 - 30
2333123	Tolfenpyrad	2.48	Spike	P	0 - 30
2333123	Triclopyr	1.94	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P415388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333178	Total Alkalinity	0.100	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P415243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332513	TDS	7.00	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P415393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333178	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P415135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332876	Organic Carbon	1.91	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2333120
Field Sample ID: 19010099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.4	P	30 - 160
EPA 8321B	Diuron-d6	69.4	P	30 - 160
EPA 8321B	Endothall-d6	81.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.7	P	30 - 160
EPA 8321B	Primidone-d5	88.4	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2333121
Field Sample ID: 19010098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.2	P	30 - 160
EPA 8321B	Diuron-d6	64.1	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.7	P	30 - 160
EPA 8321B	Primidone-d5	93.9	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A112681

Included Lab Sample IDs: 2333102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	105	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112682

Included Lab Sample IDs: 2333102

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

Reference Method: EPA 8321B

Run ID: A112689

Included Lab Sample IDs: 2333120

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	98.1	P/P	60 - 160
Endothall	81.5	82.4	P/P	60 - 160
Glufosinate	109	109	P/P	60 - 160
Glyphosate	100	100	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A112698

Included Lab Sample IDs: 2333120, 2333121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	113	114	P/P	60 - 160
Sucralose	100	102	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112753

Included Lab Sample IDs: 2333124, 2333125, 2333126, 2333127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.9	99.7	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	102	101	P/P	90 - 110
Sodium	99.2	98.6	P/P	90 - 110
Strontium	103	103	P/P	90 - 110
Tin	100	100	P/P	90 - 110
Titanium	98.6	100	P/P	90 - 110
Vanadium	100	100	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112755

Included Lab Sample IDs: 2333124, 2333125, 2333126, 2333127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	98.2	98.9	P/P	90 - 110
Arsenic	99.1	99.2	P/P	90 - 110
Barium	98.3	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112755

Included Lab Sample IDs: 2333124, 2333125, 2333126, 2333127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	94.2	95.7	P/P	90 - 110
Boron	98.5	95.8	P/P	90 - 110
Cadmium	97.2	98.4	P/P	90 - 110
Chromium	95.5	97.0	P/P	90 - 110
Cobalt	97.2	98.1	P/P	90 - 110
Copper	98.7	99.8	P/P	90 - 110
Lead	98.7	98.2	P/P	90 - 110
Manganese	96.8	97.4	P/P	90 - 110
Molybdenum	98.1	98.2	P/P	90 - 110
Nickel	98.0	99.9	P/P	90 - 110
Selenium	96.8	97.5	P/P	90 - 110
Silver	99.2	99.7	P/P	90 - 110
Thallium	98.6	96.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112791

Included Lab Sample IDs: 2333120, 2333121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	109	P/P	50 - 150
2,4,5-T	119	114	P/P	50 - 150
Acetaminophen	108	108	P/P	60 - 160
Acetamiprid	88.1	89.9	P/P	50 - 150
Afidopyropen	79.9	82.1	P/P	50 - 150
Bentazon	113	110	P/P	50 - 160
Benzovindiflupyr	78.4	78.0	P/P	50 - 150
Carbamazepine	82.3	84.9	P/P	60 - 150
Clothianidin	94.9	95.5	P/P	60 - 150
Dinotefuran	97.3	94.3	P/P	50 - 150
Diuron	86.2	90.6	P/P	60 - 160
Fenuron	87.7	87.7	P/P	60 - 150
Fluridone	97.6	96.0	P/P	60 - 160
Hydrocodone	94.4	94.8	P/P	60 - 150
Ibuprofen	106	99.7	P/P	50 - 160
Imazapyr	100	88.0	P/P	50 - 150
Imidacloprid	87.7	88.6	P/P	60 - 150
Linuron	70.5	78.2	P/P	60 - 150
Mandestrobin	80.7	81.9	P/P	50 - 150
MCPP	101	108	P/P	50 - 150
Naproxen	111	116	P/P	50 - 160
Primidone	92.0	106	P/P	60 - 150
Pyraclostrobin	78.2	79.3	P/P	60 - 150
Silvex	111	107	P/P	50 - 150
Thiamethoxam	94.8	91.1	P/P	50 - 150
Tolfenpyrad	83.9	84.0	P/P	60 - 150
Triclopyr	99.6	111	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A112797

Included Lab Sample IDs: 2333103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112816

Included Lab Sample IDs: 2333121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	111	P/P	60 - 160
Endothall	113	99.9	P/P	60 - 160
Glufosinate	103	103	P/P	60 - 160
Glyphosate	97.9	101	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112849

Included Lab Sample IDs: 2333103

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112854

Included Lab Sample IDs: 2333124, 2333125, 2333126, 2333127

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112887

Included Lab Sample IDs: 2333103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	94.1	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A112906

Included Lab Sample IDs: 2333102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A112906

Included Lab Sample IDs: 2333102

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A112925

Included Lab Sample IDs: 2333102

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112983

Included Lab Sample IDs: 2333103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113042

Included Lab Sample IDs: 2333103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	101					2.31	
EPA 180.1 Rev. 2.0	Turbidity	97.1					5.39	
EPA 200.7 Rev. 4.4	Calcium	103	98.8	101				2.31
	Iron	103	102	105	103			2.61
	Magnesium	104	101	102	104			1.02
	Potassium	106	103	104	111			0.864
	Sodium	102	101	102				1.16
	Strontium	103	104	104	105			0.0407
	Tin	100	97.9	99.3	103			1.39
	Titanium	100	104	113	101			7.49
	Vanadium	94.3	96.1	96.5	97.5			0.405
	Zinc	99.2	98.1	98.9	102			0.759
EPA 200.8 Rev. 5.4	Aluminum	102	102	99.5	109			2.15
	Antimony	99.7	97.7	100	101			2.59
	Arsenic	101	98.9	101	100			2.27
	Barium	103	104	101	104			2.05
	Beryllium	96.5	96.6	98.6	95.3			1.81
	Boron	106	107	108	105			1.45
	Cadmium	97.8	98.1	101	101			3.11
	Chromium	95.9	99.2	100	97.4			1.31
	Cobalt	99.1	98.1	99.3	99.4			1.23
	Copper	99.1	97.7	99.0	100			1.23
	Lead	101	100	102	102			1.43
	Manganese	96.6	99.7					1.35
	Molybdenum	99.2	99.7	101	101			0.894
	Nickel	100	100	102	102			1.17
	Selenium	98.6	96.7	97.7	98.4			1.05
	Silver	99.4	98.5	99.2	100			0.742
	Thallium	102	102	105	104			2.48
EPA 300.0 Rev. 2.1	Chloride	102	101	101			0.739	
	Sulfate	101	101	101				
EPA 350.1 Rev. 2.0	Ammonia-N	94.4	94.6	97.0				1.79
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.2	104	95.6				6.34
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	98.5				1.06
EPA 365.1 Rev. 2.0	Total-P	102	105	105				0.222
EPA 8321B	2,4-D	88.3	121	121				0.143
	2,4,5-T	82.6	112	109				2.94
	Acesulfame K	102	82.6	84.8				2.59
	Acetaminophen	81.6	121	123				1.80
	Acetamiprid	69.6	75.6	74.9				0.910
	Afidopyropen	59.1	63.1	61.5				2.55
	AMPA	97.9	37.9	37.6				0.419
	Bentazon	93.8						2.42
	Benzovindiflupyr	52.5	61.6	57.5				6.97
	Carbamazepine	66.1	91.4	93.5				1.86
	Clothianidin	76.6	104	100				2.70
	Dinotefuran	78.4	126	124				1.81
	Diuron	66.8	80.8	85.3				4.85
	Endothall	72.4	89.4	86.8				2.91
	Fenuron	72.1	76.9	78.4				1.95
	Fluridone	75.0	87.4	85.6				1.68
	Glufosinate	104	50.9	53.8				5.63
	Glyphosate	92.8	48.7	52.1				3.45
	Hydrocodone	75.3	93.2	98.2				5.26

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Ibuprofen	84.2	92.1	96.3			4.41
	Imazapyr	84.7					7.54
	Imidacloprid	70.8	126	124			0.924
	Linuron	61.3	74.7	71.0			5.09
	Mandestrobin	53.5	62.6	61.1			2.36
	MCPP	91.7	133	131			1.41
	Naproxen	78.9	94.3	113			18.1
	Primidone	81.6	109	106			3.41
	Pyraclostrobin	50.9	57.9	57.0			1.57
	Silvex	75.8	104	109			5.21
	Sucralose	96.9					14.5
	Thiamethoxam	73.9	126	126			0.388
	Tolfenpyrad	40.5	44.6	45.8			2.48
	Triclopyr	84.0	126	123			1.94
SM 2320 B-2011	Total Alkalinity	103				0.100	
SM 2540 C-2011	TDS					7.00	
SM 4500-F- C-2011	Fluoride	102	103	103			0.0
SM 5310 B-2011	Organic Carbon	89.1	90.0	93.2			1.91

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2333102
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2333102
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2333124, 2333125, 2333126, 2333127
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2333124, 2333125, 2333126, 2333127
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2333102
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2333102
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2333103
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2333103
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2333103
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2333103
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2333120, 2333121
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2333102
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2333124, 2333125, 2333126, 2333127
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2333102
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2333102
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2333102
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2333103

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	06/08/2022			06/08/2022 16:32	Samantha L Bates	2333102
EPA 180.1 Rev. 2.0	06/08/2022			06/08/2022 14:43	Khloe J Berg	2333102
EPA 200.7 Rev. 4.4	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/11/2022 15:51	Betina Topolski	2333124
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/11/2022 15:59	Betina Topolski	2333125
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/11/2022 16:07	Betina Topolski	2333126
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/11/2022 16:15	Betina Topolski	2333127
EPA 200.8 Rev. 5.4	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/10/2022 21:29	Alexander Thompson	2333124
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/10/2022 21:38	Alexander Thompson	2333125
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/10/2022 21:48	Alexander Thompson	2333126
	06/08/2022	06/10/2022 10:12	Megan Whitefoot	06/10/2022 21:58	Alexander Thompson	2333127
	06/08/2022	06/15/2022 09:35	Megan Whitefoot	06/15/2022 16:54	Alexander Thompson	2333124
	06/08/2022	06/15/2022 09:35	Megan Whitefoot	06/15/2022 17:00	Alexander Thompson	2333125
	06/08/2022	06/15/2022 09:35	Megan Whitefoot	06/15/2022 17:06	Alexander Thompson	2333126
	06/08/2022	06/15/2022 09:35	Megan Whitefoot	06/15/2022 17:13	Alexander Thompson	2333127
EPA 300.0 Rev. 2.1	06/08/2022			06/16/2022 01:13	Anna M. Plaviak	2333102
EPA 350.1 Rev. 2.0	06/08/2022			06/22/2022 13:11	Ping Hua	2333103
EPA 351.2 Rev. 2.0	06/08/2022	06/14/2022 16:18	Samantha L Bates	06/16/2022 11:28	Alexandra J Mattheus	2333103
EPA 353.2 Rev. 2.0	06/08/2022			06/24/2022 11:38	Beverly Y. Sanders	2333103
EPA 365.1 Rev. 2.0	06/08/2022	06/13/2022 16:25	Simonne.V. Calhoun	06/15/2022 15:14	James L Waggeberby	2333103
EPA 8321B	06/08/2022	06/08/2022 14:00	Umesh Chiluwal	06/08/2022 20:01	Umesh Chiluwal	2333120
	06/08/2022	06/08/2022 14:00	Umesh Chiluwal	06/09/2022 10:31	Umesh Chiluwal	2333120
	06/08/2022	06/08/2022 14:00	Umesh Chiluwal	06/09/2022 10:46	Umesh Chiluwal	2333121
	06/08/2022	06/08/2022 14:00	Umesh Chiluwal	06/14/2022 09:16	Umesh Chiluwal	2333121
	06/08/2022	06/10/2022 13:00	Hoor Shaik	06/11/2022 11:09	Juyoung Kim	2333120
	06/08/2022	06/10/2022 13:00	Hoor Shaik	06/11/2022 11:43	Juyoung Kim	2333121
SM 2320 B-2011	06/08/2022			06/16/2022 22:58	Dale L. Simmons	2333102
SM 2340 B-2011	06/08/2022			06/11/2022 15:51	Betina Topolski	2333124
	06/08/2022			06/11/2022 15:59	Betina Topolski	2333125
	06/08/2022			06/11/2022 16:07	Betina Topolski	2333126
	06/08/2022			06/11/2022 16:15	Betina Topolski	2333127
SM 2540 C-2011	06/08/2022			06/10/2022 14:26	Yijie Li	2333102
SM 2540 D-2011	06/08/2022			06/10/2022 14:26	Yijie Li	2333102
SM 4500-F- C-2011	06/08/2022			06/16/2022 22:58	Dale L. Simmons	2333102
SM 5310 B-2011	06/08/2022			06/13/2022 21:46	Judith K. Clark	2333103