

Chemical Analysis Report

NE-DIST-2022-04-14-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

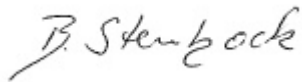
Event Description: **Pellicer Creek Tribs**
Request ID: **RQ-2022-04-04-38**
Customer: **NE-DIST**
Project ID: **SMP**

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

Date Certified: 04-MAY-2022 18:23



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: PRINGLE APROX. 100M ABV RR TRACKS

Collection Date/Time: 04/13/2022 10:25

Field ID: 27010974

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319273	EPA 200.7 Rev. 4.4	Calcium	14.6		mg/L	P412467	
		Iron	1.55E+03		ug/L	P412467	
		Magnesium	1.76		mg/L	P412467	
		Potassium	0.30	U	mg/L	P412467	
		Sodium	11.5		mg/L	P412467	
		Strontium	76.7		ug/L	P412467	
		Tin	3.0	U	ug/L	P412467	
		Titanium	2.4	I	ug/L	P412467	
		Vanadium	2.0	U	ug/L	P412467	
		Zinc	5.5	I	ug/L	P412467	
	EPA 200.8 Rev. 5.4	Aluminum	701		ug/L	P412467	
		Antimony	0.050	U	ug/L	P412467	
		Arsenic	0.41		ug/L	P412467	
		Barium	13.5		ug/L	P412467	
		Beryllium	0.056		ug/L	P412467	
		Boron**	19.7		ug/L	P412467	
		Cadmium	0.020	U	ug/L	P412467	
		Chromium	0.80	I	ug/L	P412467	
		Cobalt	0.347		ug/L	P412467	
		Copper	0.40	U	ug/L	P412467	
		Lead	0.48		ug/L	P412467	
		Manganese	18.8		ug/L	P412467	
		Molybdenum	0.15	U	ug/L	P412467	
		Nickel	0.58	I	ug/L	P412467	
		Selenium	0.21	I	ug/L	P412467	
		Silver	0.010	U	ug/L	P412467	
		Thallium	0.10	U	ug/L	P412467	
	SM 2340 B-2011	Hardness	43.6		mg/L	P412467	

Sample Location: Pellicer Creek downstream of RR tracks

Collection Date/Time: 04/13/2022 11:35

Field ID: G5NE0590

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319271	EPA 8321B	2,4-D	0.0020	U	ug/L	P412405	
		Acesulfame K	0.10	U	ug/L	P412362	
		2,4,5-T	0.0040	U	ug/L	P412405	
		AMPA	0.10	U	ug/L	P412362	
		Acetaminophen	0.0080	U	ug/L	P412405	
		Acetamiprid	0.0020	U	ug/L	P412405	
		Endothall	0.25	U	ug/L	P412362	
		Glufosinate	0.10	U	ug/L	P412362	
		Glyphosate	0.10	U	ug/L	P412362	
		Afidopyropen	0.0020	U	ug/L	P412405	
		Bentazon	8.0E-04	U	ug/L	P412405	
		Sucralose	0.010	U	ug/L	P412362	
		Benzovindiflupyr	0.0020	U	ug/L	P412405	
		Carbamazepine	8.0E-04	U	ug/L	P412405	
		Clothianidin	0.0020	U	ug/L	P412405	
		Dinotefuran	0.0020	U	ug/L	P412405	
		Diuron	0.0020	U	ug/L	P412405	
		Fenuron	0.016	U	ug/L	P412405	
		Fluridone	8.0E-04	U	ug/L	P412405	
		Imazapyr	0.043		ug/L	P412405	
		Hydrocodone	0.0020	U	ug/L	P412405	
		Ibuprofen	0.020	U	ug/L	P412405	
		Imidacloprid	0.0020	U	ug/L	P412405	MS
		Linuron	0.0040	U	ug/L	P412405	
		Mandestrobin	0.0020	U	ug/L	P412405	
		MCPP	0.0020	U	ug/L	P412405	
		Naproxen	0.0080	U	ug/L	P412405	RPD
		Primidone	0.0040	U	ug/L	P412405	
		Pyraclostrobin	0.0020	U	ug/L	P412405	
		Silvex	0.0040	U	ug/L	P412405	
		Thiamethoxam	0.0020	U	ug/L	P412405	MS
		Tolfenpyrad	0.0020	U	ug/L	P412405	
		Triclopyr	0.0040	U	ug/L	P412405	

Ref. Method and Comment:

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

Sample Location: PELLICER CREEK above Schoolhouse Br

Collection Date/Time: 04/13/2022 11:00

Field ID: G5NE0598

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319261	DEP SOP: NU-094-1	Color (true)**	720		PCU	P412388	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P412384	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P412821	
		Sulfate	2.9		mg SO4/L	P412823	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P412680	
	SM 2540 C-2011	TDS	175		mg/L	P412852	
	SM 2540 D-2011	TSS	3	I	mg/L	P412856	
2319262	SM 4500-F- C-2011	Fluoride	0.053	I	mg F/L	P412684	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P412545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P412767	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P412503	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P412666	
2319270	SM 5310 B-2011	Organic Carbon	55		mg C/L	P412782	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P412405	
		Acesulfame K	0.10	U	ug/L	P412362	
		2,4,5-T	0.0040	U	ug/L	P412405	
		AMPA	0.10	U	ug/L	P412362	
		Acetaminophen	0.0080	U	ug/L	P412405	
		Acetamiprid	0.0020	U	ug/L	P412405	
		Endothall	0.25	U	ug/L	P412362	
		Glufosinate	0.10	U	ug/L	P412362	
		Glyphosate	0.10	U	ug/L	P412362	
		Afidopyropen	0.0020	U	ug/L	P412405	
		Bentazon	8.0E-04	U	ug/L	P412405	
		Sucralose	0.024	I	ug/L	P412362	
		Benzovindiflupyr	0.0020	U	ug/L	P412405	
		Carbamazepine	8.0E-04	U	ug/L	P412405	
		Clothianidin	0.0020	U	ug/L	P412405	
		Dinotefuran	0.0020	U	ug/L	P412405	
		Diuron	0.0020	U	ug/L	P412405	
		Fenuron	0.016	U	ug/L	P412405	
		Fluridone	8.0E-04	U	ug/L	P412405	
		Imazapyr	0.046		ug/L	P412405	
		Hydrocodone	0.0020	U	ug/L	P412405	
		Ibuprofen	0.020	U	ug/L	P412405	
		Imidacloprid	0.0020	U	ug/L	P412405	MS
		Linuron	0.0040	U	ug/L	P412405	
		Mandestrobin	0.0020	U	ug/L	P412405	
		MCPP	0.0020	U	ug/L	P412405	
		Naproxen	0.0080	U	ug/L	P412405	RPD
		Primidone	0.0040	U	ug/L	P412405	
		Pyraclostrobin	0.0020	U	ug/L	P412405	
		Silvex	0.0040	U	ug/L	P412405	
		Thiamethoxam	0.0020	U	ug/L	P412405	MS

Field ID: G5NE0598

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319270	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P412405	
		Triclopyr	0.0040	U	ug/L	P412405	

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 a high concentration of parameters in the spiked sample.

Sample Location: SchoolHouse Branch at RR tracks

Collection Date/Time: 04/13/2022 11:15

Field ID: G5NE0599

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319259	DEP SOP: NU-094-1	Color (true)**	440		PCU	P412388	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P412384	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P412821	
		Sulfate	3.2		mg SO4/L	P412823	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P412680	
	SM 2540 C-2011	TDS	148	A	mg/L	P412852	
	SM 2540 D-2011	TSS	2	UA	mg/L	P412856	
2319260	SM 4500-F- C-2011	Fluoride	0.037	I	mg F/L	P412684	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P412545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P412767	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P412503	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P412666	
2319269	SM 5310 B-2011	Organic Carbon	36		mg C/L	P412782	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P412405	
		Acesulfame K	0.10	U	ug/L	P412362	
		2,4,5-T	0.0040	U	ug/L	P412405	
		AMPA	0.10	U	ug/L	P412362	
		Acetaminophen	0.0080	U	ug/L	P412405	
		Acetamiprid	0.0020	U	ug/L	P412405	
		Endothall	0.25	U	ug/L	P412362	
		Glufosinate	0.10	U	ug/L	P412362	
		Glyphosate	0.10	U	ug/L	P412362	
		Afidopyropen	0.0020	U	ug/L	P412405	
		Bentazon	8.0E-04	U	ug/L	P412405	
		Sucralose	0.010	U	ug/L	P412362	
		Benzovindiflupyr	0.0020	U	ug/L	P412405	
		Carbamazepine	8.0E-04	U	ug/L	P412405	
		Clothianidin	0.0020	U	ug/L	P412405	
		Dinotefuran	0.0020	U	ug/L	P412405	
		Diuron	0.0020	U	ug/L	P412405	
		Fenuron	0.016	U	ug/L	P412405	
		Fluridone	8.0E-04	U	ug/L	P412405	
		Imazapyr	0.080		ug/L	P412405	
		Hydrocodone	0.0020	U	ug/L	P412405	
		Ibuprofen	0.020	U	ug/L	P412405	
		Imidacloprid	0.0020	U	ug/L	P412405	MS
		Linuron	0.0040	U	ug/L	P412405	
		Mandestrobin	0.0020	U	ug/L	P412405	
		MCPP	0.0020	U	ug/L	P412405	
		Naproxen	0.0080	U	ug/L	P412405	RPD
		Primidone	0.0040	U	ug/L	P412405	
		Pyraclostrobin	0.0020	U	ug/L	P412405	
		Silvex	0.0040	U	ug/L	P412405	
		Thiamethoxam	0.0020	U	ug/L	P412405	MS

Field ID: G5NE0599

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319269	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P412405	
		Triclopyr	0.0040	U	ug/L	P412405	
2319272	EPA 200.7 Rev. 4.4	Calcium	20.3		mg/L	P412467	
		Iron	920		ug/L	P412467	
		Magnesium	1.97		mg/L	P412467	
		Potassium	0.30	U	mg/L	P412467	
		Sodium	11.5		mg/L	P412467	
		Strontium	92.4		ug/L	P412467	
		Tin	3.0	U	ug/L	P412467	
		Titanium	1.8	I	ug/L	P412467	
		Vanadium	2.0	U	ug/L	P412467	
		Zinc	5.0	U	ug/L	P412467	
	EPA 200.8 Rev. 5.4	Aluminum	451		ug/L	P412467	
		Antimony	0.078	I	ug/L	P412467	
		Arsenic	0.35		ug/L	P412467	
		Barium	12.1		ug/L	P412467	
		Beryllium	0.045		ug/L	P412467	
		Boron**	27.8		ug/L	P412467	
		Cadmium	0.020	U	ug/L	P412467	
		Chromium	0.47	I	ug/L	P412467	
		Cobalt	0.134		ug/L	P412467	
		Copper	0.40	U	ug/L	P412467	
		Lead	0.41		ug/L	P412467	
		Manganese	7.56		ug/L	P412467	
		Molybdenum	0.23	I	ug/L	P412467	
		Nickel	0.50	U	ug/L	P412467	
		Selenium	0.20	U	ug/L	P412467	
		Silver	0.010	U	ug/L	P412467	
		Thallium	0.10	U	ug/L	P412467	
	SM 2340 B-2011	Hardness	58.8		mg/L	P412467	

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 a high concentration of parameters in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P412388

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412384

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412467

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: P412467

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: P412821

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: P412823

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412545

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412767

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412503

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412666

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

Reference Method: EPA 8321B
Batch ID: P412362

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: P412405

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: P412405

Component	Result	Code	Units
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
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: P412680

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

Reference Method: SM 2540 C-2011
Batch ID: P412852

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P412856

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P412684

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P412782

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: P412388

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412384

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: P412467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	110		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	105		P	85 - 115
Sodium	102		P	85 - 115
Strontium	102		P	85 - 115
Tin	103		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	97.7		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.0		P	85 - 115
Antimony	98.1		P	85 - 115
Arsenic	99.0		P	85 - 115
Barium	103		P	85 - 115
Beryllium	94.6		P	85 - 115
Boron	101		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	96.6		P	85 - 115
Cobalt	97.1		P	85 - 115
Copper	96.3		P	85 - 115
Lead	94.2		P	85 - 115
Manganese	98.2		P	85 - 115
Molybdenum	98.5		P	85 - 115
Nickel	97.1		P	85 - 115
Selenium	95.3		P	85 - 115
Silver	99.0		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412821

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412545

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412503

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: P412666

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

Reference Method: EPA 8321B
Batch ID: P412362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	86.9		P	40 - 150
AMPA	78.4		P	40 - 150
Endothall	97.4		P	40 - 150
Glufosinate	88.2		P	40 - 150
Glyphosate	95.5		P	40 - 150
Sucralose	74.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P412405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	30 - 160
2,4,5-T	105		P	30 - 160
Acetaminophen	90.3		P	30 - 150
Acetamiprid	107		P	30 - 160
Afidopyropen	81.3		P	30 - 160
Bentazon	35.6		P	30 - 150
Benzovindiflupyr	80.4		P	30 - 160
Carbamazepine	108		P	30 - 160
Clothianidin	105		P	30 - 160
Dinotefuran	101		P	30 - 160
Diuron	86.9		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P412405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	97.8		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	93.1		P	30 - 160
Ibuprofen	80.2		P	30 - 160
Imazapyr	116		P	30 - 160
Imidacloprid	102		P	30 - 160
Linuron	73.9		P	30 - 160
Mandestrobin	97.6		P	30 - 160
MCPP	109		P	30 - 160
Naproxen	90.8		P	30 - 160
Primidone	90.3		P	30 - 160
Pyraclostrobin	80.7		P	30 - 160
Silvex	87.9		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	52.9		P	30 - 160
Triclopyr	106		P	30 - 160

Reference Method: SM 2320 B-2011
Batch ID: P412680

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: P412684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P412782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319008	Calcium	104		P	80 - 120
2319008	Iron	109		P	80 - 120
2319008	Magnesium	108		P	80 - 120
2319008	Potassium	105		P	80 - 120
2319008	Sodium	108		P	80 - 120
2319008	Strontium	104		P	80 - 120
2319008	Tin	108		P	80 - 120
2319008	Titanium	106		P	80 - 120
2319008	Vanadium	101		P	80 - 120
2319008	Zinc	106		P	80 - 120
2319245	Calcium	106		P	80 - 120
2319245	Iron	111	110	P/P	80 - 120
2319245	Magnesium	111	111	P/P	80 - 120
2319245	Potassium	112	112	P/P	80 - 120
2319245	Sodium	104		P	80 - 120
2319245	Strontium	104	103	P/P	80 - 120
2319245	Tin	105	102	P/P	80 - 120
2319245	Titanium	105	104	P/P	80 - 120
2319245	Vanadium	99.8	99.1	P/P	80 - 120
2319245	Zinc	105	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319008	Aluminum	97.1		P	80 - 120
2319008	Antimony	99.3		P	80 - 120
2319008	Arsenic	96.1		P	80 - 120
2319008	Barium	101		P	80 - 120
2319008	Beryllium	93.8		P	80 - 120
2319008	Boron	104		P	80 - 120
2319008	Cadmium	99.2		P	80 - 120
2319008	Chromium	98.2		P	80 - 120
2319008	Cobalt	96.4		P	80 - 120
2319008	Copper	94.6		P	80 - 120
2319008	Lead	93.9		P	80 - 120
2319008	Manganese	100		P	80 - 120
2319008	Molybdenum	99.3		P	80 - 120
2319008	Nickel	96.8		P	80 - 120
2319008	Selenium	92.8		P	80 - 120
2319008	Silver	98.3		P	80 - 120
2319008	Thallium	101		P	80 - 120
2319245	Aluminum	102	102	P/P	80 - 120
2319245	Antimony	97.7	97.4	P/P	80 - 120
2319245	Arsenic	98.4	98.0	P/P	80 - 120
2319245	Barium	102	102	P/P	80 - 120
2319245	Beryllium	90.4	90.8	P/P	80 - 120
2319245	Boron	101	99.7	P/P	80 - 120
2319245	Cadmium	97.9	97.9	P/P	80 - 120
2319245	Chromium	96.4	96.1	P/P	80 - 120
2319245	Cobalt	96.5	97.1	P/P	80 - 120
2319245	Copper	97.7	97.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319245	Lead	94.0	93.6	P/P	80 - 120
2319245	Manganese	97.3	97.7	P/P	80 - 120
2319245	Molybdenum	99.0	98.3	P/P	80 - 120
2319245	Nickel	97.4	98.3	P/P	80 - 120
2319245	Selenium	95.7	96.9	P/P	80 - 120
2319245	Silver	97.4	97.3	P/P	80 - 120
2319245	Thallium	102	103	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319204	Chloride	96.9		P	90 - 110
2319259	Chloride	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319204	Sulfate	97.6		P	90 - 110
2319259	Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319207	Ammonia-N	97.8	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318998	Kjeldahl Nitrogen	96.0	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319260	NO2NO3-N	93.0	92.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319227	Total-P	108	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P412362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318805	Acesulfame K	100	101	P/P	40 - 150
2318805	AMPA	64.9	65.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P412362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318805	Endothall	95.3	98.5	P/P	40 - 150
2318805	Glufosinate	77.7	80.9	P/P	40 - 150
2318805	Glyphosate	75.2	76.5	P/P	40 - 150
2318805	Sucralose	66.1	76.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P412405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319182	2,4-D	96.2	77.6	P/P	30 - 160
2319182	2,4,5-T	84.1	84.3	P/P	30 - 160
2319182	Acetaminophen	110	102	P/P	30 - 150
2319182	Acetamiprid	124	119	P/P	30 - 160
2319182	Afidopyropen	106	86.7	P/P	30 - 160
2319182	Benzovindiflupyr	85.9	77.3	P/P	30 - 160
2319182	Carbamazepine	109	103	P/P	30 - 160
2319182	Clothianidin	128	126	P/P	30 - 160
2319182	Dinotefuran	135	126	P/P	30 - 160
2319182	Diuron	73.5	71.9	P/P	30 - 160
2319182	Fenuron	92.9	86.6	P/P	30 - 160
2319182	Fluridone	98.3	96.4	P/P	30 - 160
2319182	Hydrocodone	104	92.8	P/P	30 - 160
2319182	Ibuprofen	66.5	69.3	P/P	30 - 160
2319182	Imidacloprid	183	176	F/F	30 - 160
2319182	Linuron	67.7	62.2	P/P	30 - 160
2319182	Mandestrobin	102	92.3	P/P	30 - 160
2319182	MCPP	95.5	97.3	P/P	30 - 160
2319182	Naproxen	72.7	50.5	P/P	30 - 160
2319182	Primidone	121	113	P/P	30 - 160
2319182	Pyraclostrobin	90.1	82.9	P/P	30 - 160
2319182	Silvex	90.2	77.3	P/P	30 - 160
2319182	Thiamethoxam	163	156	F/P	30 - 160
2319182	Tolfenpyrad	48.9	57.3	P/P	30 - 160
2319182	Triclopyr	86.5	89.4	P/P	30 - 160

Reference Method: SM 4500-F- C-2011
Batch ID: P412684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318994	Fluoride	98.2	98.2	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319373	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P412388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319359	Color (true)	7.54	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319225	Turbidity	4.53	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319245	Calcium	1.61	Spike	P	0 - 20
2319245	Iron	0.252	Spike	P	0 - 20
2319245	Magnesium	0.326	Spike	P	0 - 20
2319245	Potassium	0.330	Spike	P	0 - 20
2319245	Sodium	2.54	Spike	P	0 - 20
2319245	Strontium	1.59	Spike	P	0 - 20
2319245	Tin	2.33	Spike	P	0 - 20
2319245	Titanium	0.956	Spike	P	0 - 20
2319245	Vanadium	0.672	Spike	P	0 - 20
2319245	Zinc	0.732	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319245	Aluminum	0.316	Spike	P	0 - 20
2319245	Antimony	0.399	Spike	P	0 - 20
2319245	Arsenic	0.342	Spike	P	0 - 20
2319245	Barium	0.138	Spike	P	0 - 20
2319245	Beryllium	0.394	Spike	P	0 - 20
2319245	Boron	1.11	Spike	P	0 - 20
2319245	Cadmium	0.0310	Spike	P	0 - 20
2319245	Chromium	0.308	Spike	P	0 - 20
2319245	Cobalt	0.618	Spike	P	0 - 20
2319245	Copper	0.0385	Spike	P	0 - 20
2319245	Lead	0.438	Spike	P	0 - 20
2319245	Manganese	0.361	Spike	P	0 - 20
2319245	Molybdenum	0.752	Spike	P	0 - 20
2319245	Nickel	0.905	Spike	P	0 - 20
2319245	Selenium	1.23	Spike	P	0 - 20
2319245	Silver	0.145	Spike	P	0 - 20
2319245	Thallium	0.427	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319204	Chloride	0.138	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319207	Ammonia-N	0.563	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318998	Kjeldahl Nitrogen	0.942	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319260	NO2NO3-N	0.525	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319227	Total-P	3.89	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P412362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318805	Acesulfame K	1.24	Spike	P	0 - 30
2318805	AMPA	0.0653	Spike	P	0 - 30
2318805	Endothall	3.37	Spike	P	0 - 30
2318805	Glufosinate	4.06	Spike	P	0 - 30
2318805	Glyphosate	1.68	Spike	P	0 - 30
2318805	Sucralose	13.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P412405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319182	2,4-D	16.7	Spike	P	0 - 30
2319182	2,4,5-T	0.155	Spike	P	0 - 30
2319182	Acetaminophen	7.21	Spike	P	0 - 30
2319182	Acetamiprid	4.44	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P412405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319182	Afidopyropen	19.8	Spike	P	0 - 30
2319182	Bentazon	8.47	Spike	P	0 - 30
2319182	Benzovindiflupyr	10.6	Spike	P	0 - 30
2319182	Carbamazepine	6.26	Spike	P	0 - 30
2319182	Clothianidin	1.90	Spike	P	0 - 30
2319182	Dinotefuran	6.48	Spike	P	0 - 30
2319182	Diuron	1.95	Spike	P	0 - 30
2319182	Fenuron	7.05	Spike	P	0 - 30
2319182	Fluridone	1.65	Spike	P	0 - 30
2319182	Hydrocodone	11.0	Spike	P	0 - 30
2319182	Ibuprofen	4.01	Spike	P	0 - 30
2319182	Imazapyr	7.55	Spike	P	0 - 30
2319182	Imidacloprid	3.63	Spike	P	0 - 30
2319182	Linuron	8.51	Spike	P	0 - 30
2319182	Mandestrobin	9.61	Spike	P	0 - 30
2319182	MCPP	1.82	Spike	P	0 - 30
2319182	Naproxen	36.0	Spike	F	0 - 30
2319182	Primidone	7.01	Spike	P	0 - 30
2319182	Pyraclostrobin	8.36	Spike	P	0 - 30
2319182	Silvex	15.4	Spike	P	0 - 30
2319182	Thiamethoxam	4.47	Spike	P	0 - 30
2319182	Tolfenpyrad	15.8	Spike	P	0 - 30
2319182	Triclopyr	3.28	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P412680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318994	Total Alkalinity	0.105	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P412852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319259	TDS	2.70	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P412684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318994	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P412782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319373	Organic Carbon	0.0916	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: 2319269

Field Sample ID: G5NE0599

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.6	P	30 - 160
EPA 8321B	Diuron-d6	69.3	P	30 - 160
EPA 8321B	Endothall-d6	130	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.2	P	30 - 160
EPA 8321B	Primidone-d5	88.1	P	30 - 160
EPA 8321B	Sucralose-d6	75.9	P	30 - 160

Lab Sample ID: 2319270

Field Sample ID: G5NE0598

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.5	P	30 - 160
EPA 8321B	Diuron-d6	65.8	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.3	P	30 - 160
EPA 8321B	Primidone-d5	73.7	P	30 - 160
EPA 8321B	Sucralose-d6	79.5	P	30 - 160

Lab Sample ID: 2319271

Field Sample ID: G5NE0590

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.6	P	30 - 160
EPA 8321B	Diuron-d6	62.8	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.5	P	30 - 160
EPA 8321B	Primidone-d5	75.1	P	30 - 160
EPA 8321B	Sucralose-d6	82.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111479

Included Lab Sample IDs: 2319259, 2319261

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

Reference Method: DEP SOP: NU-094-1

Run ID: A111480

Included Lab Sample IDs: 2319259, 2319261

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111531

Included Lab Sample IDs: 2319260, 2319262

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111541

Included Lab Sample IDs: 2319272, 2319273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.3	98.9	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	98.1	97.6	P/P	90 - 110
Barium	98.8	98.5	P/P	90 - 110
Beryllium	95.5	93.2	P/P	90 - 110
Boron	99.7	102	P/P	90 - 110
Cadmium	99.8	99.7	P/P	90 - 110
Chromium	99.7	99.9	P/P	90 - 110
Cobalt	96.8	95.9	P/P	90 - 110
Copper	94.4	95.5	P/P	90 - 110
Lead	94.6	94.2	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	97.3	97.8	P/P	90 - 110
Nickel	97.0	96.8	P/P	90 - 110
Selenium	99.7	98.0	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Thallium	99.0	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111551

Included Lab Sample IDs: 2319260, 2319262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111591

Included Lab Sample IDs: 2319259, 2319261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A111591

Included Lab Sample IDs: 2319259, 2319261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.4	96.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111591

Included Lab Sample IDs: 2319259, 2319261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111604

Included Lab Sample IDs: 2319269, 2319270, 2319271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	72.9	72.2	P/P	60 - 160
Sucralose	82.9	83.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111607

Included Lab Sample IDs: 2319269, 2319270, 2319271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	112	P/P	60 - 160
Endothall	124	130	P/P	60 - 160
Glufosinate	119	115	P/P	60 - 160
Glyphosate	123	127	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A111644

Included Lab Sample IDs: 2319260, 2319262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	99.2	P/P	90 - 110
Organic Carbon	99.2	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111657

Included Lab Sample IDs: 2319272, 2319273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	101	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Magnesium	102	104	P/P	90 - 110
Potassium	101	103	P/P	90 - 110
Sodium	98.1	100	P/P	90 - 110
Strontium	99.1	99.3	P/P	90 - 110
Tin	99.5	103	P/P	90 - 110
Titanium	99.7	101	P/P	90 - 110
Vanadium	100	101	P/P	90 - 110
Zinc	99.8	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111664

Included Lab Sample IDs: 2319259, 2319261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	99.6	P/P	90 - 110
Sulfate	99.6	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111672

Included Lab Sample IDs: 2319260, 2319262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111695

Included Lab Sample IDs: 2319260, 2319262

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

Reference Method: EPA 8321B

Run ID: A111767

Included Lab Sample IDs: 2319269, 2319270, 2319271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	80.5	72.5	P/P	50 - 150
2,4,5-T	76.0	93.8	P/P	50 - 150
Acetaminophen	79.7	83.6	P/P	60 - 160
Acetamiprid	98.4	97.1	P/P	50 - 150
Afidopyropen	80.8	74.5	P/P	50 - 150
Bentazon	95.7	95.5	P/P	50 - 160
Benzovindiflupyr	94.8	95.4	P/P	50 - 150
Carbamazepine	90.4	88.5	P/P	60 - 150
Clothianidin	89.3	107	P/P	60 - 150
Dinotefuran	75.2	87.3	P/P	50 - 150
Diuron	94.1	99.4	P/P	60 - 160
Fenuron	97.1	98.5	P/P	60 - 150
Fluridone	101	103	P/P	60 - 160
Hydrocodone	90.3	92.5	P/P	60 - 150
Ibuprofen	73.1	135	P/P	50 - 160
Imazapyr	80.4	84.9	P/P	50 - 150
Imidacloprid	92.7	90.6	P/P	60 - 150
Linuron	97.5	80.7	P/P	60 - 150
Mandestrobin	99.8	92.9	P/P	50 - 150
MCPP	85.4	73.8	P/P	50 - 150
Naproxen	84.0	90.2	P/P	50 - 160
Primidone	88.9	83.2	P/P	60 - 150
Pyraclostrobin	108	101	P/P	60 - 150
Silvex	77.5	78.8	P/P	50 - 150
Thiamethoxam	94.2	87.9	P/P	50 - 150
Tolfenpyrad	88.9	89.3	P/P	60 - 150
Triclopyr	82.5	89.2	P/P	50 - 150

Quality Assurance Report

Calibration Verification

* 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)	100					7.54	
EPA 180.1 Rev. 2.0	Turbidity	95.7					4.53	
EPA 200.7 Rev. 4.4	Calcium	104	104	106				1.61
	Iron	110	109	111	110			0.252
	Magnesium	110	108	111	111			0.326
	Potassium	105	105	112	112			0.330
	Sodium	102	104	108				2.54
	Strontium	102	104	104	103			1.59
	Tin	103	108	105	102			2.33
	Titanium	104	106	105	104			0.956
	Vanadium	97.7	101	99.8	99.1			0.672
	Zinc	103	106	105	104			0.732
EPA 200.8 Rev. 5.4	Aluminum	99.0	102	102	97.1			0.316
	Antimony	98.1	97.7	97.4	99.3			0.399
	Arsenic	99.0	98.4	98.0	96.1			0.342
	Barium	103	102	102	101			0.138
	Beryllium	94.6	90.4	90.8	93.8			0.394
	Boron	101	101	99.7	104			1.11
	Cadmium	98.7	97.9	97.9	99.2			0.0310
	Chromium	96.6	96.4	96.1	98.2			0.308
	Cobalt	97.1	96.5	97.1	96.4			0.618
	Copper	96.3	97.7	97.8	94.6			0.0385
	Lead	94.2	94.0	93.6	93.9			0.438
	Manganese	98.2	97.3	97.7	100			0.361
	Molybdenum	98.5	99.0	98.3	99.3			0.752
	Nickel	97.1	97.4	98.3	96.8			0.905
	Selenium	95.3	95.7	96.9	92.8			1.23
	Silver	99.0	97.4	97.3	98.3			0.145
	Thallium	101	102	103	101			0.427
EPA 300.0 Rev. 2.1	Chloride	100	96.9	96.4			0.138	
	Sulfate	98.9	97.6	97.2				
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	97.8	98.6				0.563
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.8	96.0	95.1				0.942
EPA 353.2 Rev. 2.0	NO2NO3-N	100	93.0	92.5				0.525
EPA 365.1 Rev. 2.0	Total-P	106	108	103				3.89
EPA 8321B	2,4-D	114	96.2	77.6				16.7
	2,4,5-T	105	84.1	84.3				0.155
	Acesulfame K	86.9	100	101				1.24
	Acetaminophen	90.3	110	102				7.21
	Acetamiprid	107	124	119				4.44
	Afidopyropen	81.3	106	86.7				19.8
	AMPA	78.4	64.9	65.0				0.0653
	Bentazon	35.6						8.47
	Benzovindiflupyr	80.4	85.9	77.3				10.6
	Carbamazepine	108	109	103				6.26
	Clothianidin	105	128	126				1.90
	Dinotefuran	101	135	126				6.48
	Diuron	86.9	73.5	71.9				1.95
	Endothall	97.4	95.3	98.5				3.37
	Fenuron	97.8	92.9	86.6				7.05
	Fluridone	101	98.3	96.4				1.65
	Glufosinate	88.2	77.7	80.9				4.06
	Glyphosate	95.5	75.2	76.5				1.68
	Hydrocodone	93.1	104	92.8				11.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Ibuprofen	80.2	66.5	69.3			4.01
	Imazapyr	116					7.55
	Imidacloprid	102	183	176			3.63
	Linuron	73.9	67.7	62.2			8.51
	Mandestrobin	97.6	102	92.3			9.61
	MCPP	109	95.5	97.3			1.82
	Naproxen	90.8	72.7	50.5			36.0
	Primidone	90.3	121	113			7.01
	Pyraclostrobin	80.7	90.1	82.9			8.36
	Silvex	87.9	90.2	77.3			15.4
	Sucralose	74.7	66.1	76.6			13.9
	Thiamethoxam	102	163	156			4.47
	Tolfenpyrad	52.9	48.9	57.3			15.8
	Triclopyr	106	86.5	89.4			3.28
SM 2320 B-2011	Total Alkalinity	97.8				0.105	
SM 2540 C-2011	TDS					2.70	
SM 4500-F- C-2011	Fluoride	98.5	98.2	98.2			0.0
SM 5310 B-2011	Organic Carbon	95.2	103				0.0916

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2319259, 2319261
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2319259, 2319261
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2319272, 2319273
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2319272, 2319273
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2319259, 2319261
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2319259, 2319261
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2319260, 2319262
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2319260, 2319262
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2319260, 2319262
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2319260, 2319262
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2319269, 2319270, 2319271
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2319259, 2319261
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2319272, 2319273
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2319259, 2319261
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2319259, 2319261
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2319259, 2319261
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2319260, 2319262

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	04/14/2022			04/14/2022 16:47	Anna M. Plaviak	2319259
	04/14/2022			04/14/2022 16:48	Anna M. Plaviak	2319261
EPA 180.1 Rev. 2.0	04/14/2022			04/14/2022 14:14	Khloe J Berg	2319259
	04/14/2022			04/14/2022 14:16	Khloe J Berg	2319261
EPA 200.7 Rev. 4.4	04/14/2022	04/18/2022 10:25	Megan Whitefoot	04/22/2022 22:48	Josef B Mick	2319272
	04/14/2022	04/18/2022 10:25	Megan Whitefoot	04/22/2022 22:56	Josef B Mick	2319273
EPA 200.8 Rev. 5.4	04/14/2022	04/18/2022 10:25	Megan Whitefoot	04/19/2022 04:12	Emily M Philpot	2319272
	04/14/2022	04/18/2022 10:25	Megan Whitefoot	04/19/2022 04:21	Emily M Philpot	2319273
EPA 300.0 Rev. 2.1	04/14/2022			04/22/2022 19:48	Anna M. Plaviak	2319259
	04/14/2022			04/22/2022 21:13	Anna M. Plaviak	2319261
EPA 350.1 Rev. 2.0	04/14/2022			04/19/2022 12:28	Ping Hua	2319260
	04/14/2022			04/19/2022 12:30	Ping Hua	2319262
EPA 351.2 Rev. 2.0	04/14/2022	04/25/2022 12:07	Alexandra J Mattheus	04/26/2022 13:44	Alexandra J Mattheus	2319260
	04/14/2022	04/25/2022 12:07	Alexandra J Mattheus	04/26/2022 13:46	Alexandra J Mattheus	2319262
EPA 353.2 Rev. 2.0	04/14/2022			04/18/2022 17:36	Nathaniel J Jones	2319260
	04/14/2022			04/18/2022 17:46	Nathaniel J Jones	2319262
EPA 365.1 Rev. 2.0	04/14/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/25/2022 13:49	Sarah A Nixon	2319260
	04/14/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/25/2022 13:50	Sarah A Nixon	2319262
EPA 8321B	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/15/2022 15:05	Manjita Shrestha	2319269
	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/15/2022 15:18	Manjita Shrestha	2319270
	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/15/2022 15:31	Manjita Shrestha	2319271
	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/16/2022 02:52	Manjita Shrestha	2319269
	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/16/2022 03:07	Manjita Shrestha	2319270
	04/14/2022	04/15/2022 10:00	Manjita Shrestha	04/16/2022 03:21	Manjita Shrestha	2319271
	04/14/2022	04/18/2022 09:00	Hoor Shaik	04/22/2022 09:15	Juyoung Kim	2319269
	04/14/2022	04/18/2022 09:00	Hoor Shaik	04/22/2022 10:27	Juyoung Kim	2319270
	04/14/2022	04/18/2022 09:00	Hoor Shaik	04/22/2022 11:01	Juyoung Kim	2319271
	04/14/2022			04/20/2022 15:09	Dale L. Simmons	2319259
SM 2320 B-2011	04/14/2022			04/20/2022 15:21	Dale L. Simmons	2319261
	04/14/2022			04/22/2022 22:48	Josef B Mick	2319272
SM 2340 B-2011	04/14/2022			04/22/2022 22:56	Josef B Mick	2319273
	04/14/2022			04/18/2022 15:45	Yijie Li	2319259, 2319261
SM 2540 C-2011	04/14/2022			04/18/2022 15:45	Yijie Li	2319259, 2319261
SM 4500-F- C-2011	04/14/2022			04/20/2022 15:09	Dale L. Simmons	2319259
	04/14/2022			04/20/2022 15:21	Dale L. Simmons	2319261
SM 5310 B-2011	04/14/2022			04/20/2022 19:49	Judith K. Clark	2319262
	04/14/2022			04/20/2022 22:58	Judith K. Clark	2319260