

Chemical Analysis Report

SW-DIST-2023-10-24-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

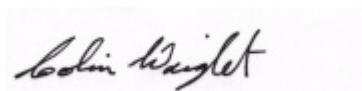
Event Description: **2023 Run 15**
Request ID: **RQ-2023-10-23-24**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-NOV-2023 08:50

A handwritten signature in black ink, reading "Colin Wright", is displayed on a light blue rectangular background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: HOWARD PRAIRIE BRANCH AT GRANGE HALL Collection Date/Time: 10/23/2023 10:15

Field ID: G2SW0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446826	DEP SOP: NU-094-1	Color (true)	200		PCU	P436928	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P436941	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P437220	
		Sulfate	16		mg SO4/L	P437223	
	SM 2320 B-2011	Total Alkalinity	103		mg CaCO3/L	P437039	
	SM 2540 C-2015	TDS	226		mg/L	P437389	
	SM 2540 D-2015	TSS	2	I	mg/L	P437269	
	SM 4500-F- C-2011	Fluoride	0.72		mg F/L	P437041	
2446828	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P437032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P436949	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P437074	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P436968	
	SM 5310 B-2011	Organic Carbon	33	A	mg C/L	P437107	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ALDERMAN CREEK AT MOSAIC

Collection Date/Time: 10/23/2023 10:30

Field ID: G2SW0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446827	DEP SOP: NU-094-1	Color (true)	43		PCU	P436928	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P436941	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P437220	
		Sulfate	70		mg SO4/L	P437223	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P437039	
	SM 2540 C-2015	TDS	207		mg/L	P437389	
	SM 2540 D-2015	TSS	2	I	mg/L	P437269	
	SM 4500-F- C-2011	Fluoride	0.53		mg F/L	P437041	
2446829	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P437032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P436949	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.8		mg N/L	P437074	
	EPA 365.1 Rev. 2.0	Total-P	0.44		mg P/L	P436968	
	SM 5310 B-2011	Organic Carbon	7.8		mg C/L	P437107	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LIL MANATEE AT TAYLOR GRADE

Collection Date/Time: 10/23/2023 11:00

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446856	EPA 8321B	2,4-D	0.0020	U	ug/L	P436963	
		Acesulfame K	0.10	U	ug/L	P436970	
		2,4,5-T	0.0040	U	ug/L	P436963	
		AMPA	0.13	I	ug/L	P436970	
		Acetaminophen	0.0080	U	ug/L	P436963	
		Acetamiprid	0.0020	U	ug/L	P436963	
		Endothall	0.25	U	ug/L	P436970	
		Glufosinate	0.10	U	ug/L	P436970	
		Glyphosate	0.10	U	ug/L	P436970	
		Afidopyropen	0.0020	U	ug/L	P436963	
		Bentazon	0.0029	I	ug/L	P436963	
		Sucralose	0.016	I	ug/L	P436970	
		Benzovindiflupyr	0.0020	U	ug/L	P436963	
		Carbamazepine	8.0E-04	U	ug/L	P436963	
		Clothianidin	0.0020	U	ug/L	P436963	
		Dinotefuran	0.0072	I	ug/L	P436963	
		Diuron	0.0020	U	ug/L	P436963	
		Fenuron	0.032	U	ug/L	P436963	
		Fluridone	8.0E-04	U	ug/L	P436963	
		Imazapyr	0.063		ug/L	P436963	
		Hydrocodone	0.0020	U	ug/L	P436963	
		Ibuprofen	0.080	U	ug/L	P436963	
		Imidacloprid	0.0028	I	ug/L	P436963	
		Linuron	0.0040	U	ug/L	P436963	
		Mandestrobin	0.0020	U	ug/L	P436963	
		MCPP	0.0020	U	ug/L	P436963	
		Naproxen	0.0080	U	ug/L	P436963	
		Primidone	0.0040	U	ug/L	P436963	
		Pyraclostrobin	0.0020	U	ug/L	P436963	
		Silvex	0.0040	U	ug/L	P436963	
		Thiamethoxam	0.0020	U	ug/L	P436963	
		Tolfenpyrad	0.0020	U	ug/L	P436963	
		Triclopyr	0.0040	U	ug/L	P436963	
2446862	EPA 200.7 Rev. 4.4	Calcium	19.1		mg/L	P437061	
		Iron	340		ug/L	P437061	
		Magnesium	7.37		mg/L	P437061	
		Potassium	4.1		mg/L	P437061	
		Sodium	9.8		mg/L	P437061	
		Strontium	247		ug/L	P437061	
		Tin	3.0	U	ug/L	P437061	
		Titanium	2.1	I	ug/L	P437061	
		Vanadium	2.0	U	ug/L	P437061	
		Zinc	5.0	U	ug/L	P437061	
	EPA 200.8 Rev. 5.4	Aluminum	126		ug/L	P437061	

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446862	EPA 200.8 Rev. 5.4	Antimony	0.088	I	ug/L	P437061	
		Arsenic	0.47		ug/L	P437061	
		Barium	7.53		ug/L	P437061	
		Beryllium	0.011	I	ug/L	P437061	
		Boron	33.6		ug/L	P437061	
		Cadmium	0.020	U	ug/L	P437061	
		Chromium	0.61	I	ug/L	P437061	
		Cobalt	0.073	I	ug/L	P437061	
		Copper	1.11		ug/L	P437061	
		Lead	0.20	U	ug/L	P437061	
		Manganese	17.8		ug/L	P437061	
		Molybdenum	0.27	I	ug/L	P437061	
		Nickel	0.50	U	ug/L	P437061	
		Selenium	0.20	U	ug/L	P437061	
		Silver	0.010	U	ug/L	P437061	
		Thallium	0.10	U	ug/L	P437061	
	SM 2340 B-2011	Hardness	78.1		mg/L	P437061	

Sample Location: LIL MANATEE RIVER S FORK AT SAFFOLD RD Collection Date/Time: 10/23/2023 11:50

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446857	EPA 8321B	2,4-D	0.0020	U	ug/L	P436963	
		Acesulfame K	0.10	U	ug/L	P436970	
		2,4,5-T	0.0040	U	ug/L	P436963	
		AMPA	0.13	I	ug/L	P436970	
		Acetaminophen	0.0080	U	ug/L	P436963	
		Acetamiprid	0.0020	U	ug/L	P436963	
		Endothall	0.25	U	ug/L	P436970	
		Glufosinate	0.10	U	ug/L	P436970	
		Glyphosate	0.10	U	ug/L	P436970	
		Afidopyropen	0.0020	U	ug/L	P436963	
		Bentazon	0.041		ug/L	P436963	
		Sucralose	0.010	U	ug/L	P436970	
		Benzovindiflupyr	0.0020	U	ug/L	P436963	
		Carbamazepine	8.0E-04	U	ug/L	P436963	
		Clothianidin	0.028		ug/L	P436963	
		Dinotefuran	0.010		ug/L	P436963	
		Diuron	0.0020	U	ug/L	P436963	
		Fenuron	0.032	U	ug/L	P436963	
		Fluridone	8.0E-04	U	ug/L	P436963	
		Imazapyr	0.026		ug/L	P436963	
		Hydrocodone	0.0020	U	ug/L	P436963	
		Ibuprofen	0.080	U	ug/L	P436963	
		Imidacloprid	0.085		ug/L	P436963	
		Linuron	0.0040	U	ug/L	P436963	
		Mandestrobin	0.0020	U	ug/L	P436963	
		MCPP	0.0020	U	ug/L	P436963	
		Naproxen	0.0080	U	ug/L	P436963	
		Primidone	0.0040	U	ug/L	P436963	
		Pyraclostrobin	0.0020	U	ug/L	P436963	
		Silvex	0.0040	U	ug/L	P436963	
		Thiamethoxam	0.032		ug/L	P436963	
		Tolfenpyrad	0.0020	U	ug/L	P436963	
		Triclopyr	0.0040	U	ug/L	P436963	
2446863	EPA 200.7 Rev. 4.4	Calcium	27.0		mg/L	P437061	
		Iron	340		ug/L	P437061	
		Magnesium	12.9		mg/L	P437061	
		Potassium	6.4		mg/L	P437061	
		Sodium	8.6		mg/L	P437061	
		Strontium	896		ug/L	P437061	
		Tin	3.0	U	ug/L	P437061	
		Titanium	2.7	I	ug/L	P437061	
		Vanadium	3.1	I	ug/L	P437061	
		Zinc	5.0	U	ug/L	P437061	
	EPA 200.8 Rev. 5.4	Aluminum	257		ug/L	P437061	

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446863	EPA 200.8 Rev. 5.4	Antimony	0.11	I	ug/L	P437061	
		Arsenic	0.32		ug/L	P437061	
		Barium	20.2		ug/L	P437061	
		Beryllium	0.029	I	ug/L	P437061	
		Boron	35.2		ug/L	P437061	
		Cadmium	0.084		ug/L	P437061	
		Chromium	0.59	I	ug/L	P437061	
		Cobalt	0.149		ug/L	P437061	
		Copper	1.88		ug/L	P437061	
		Lead	0.20	U	ug/L	P437061	
		Manganese	15.2		ug/L	P437061	
		Molybdenum	0.49	I	ug/L	P437061	
		Nickel	0.50	U	ug/L	P437061	
		Selenium	0.20	I	ug/L	P437061	
		Silver	0.010	U	ug/L	P437061	
		Thallium	0.10	U	ug/L	P437061	
	SM 2340 B-2011	Hardness	120		mg/L	P437061	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P436928

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436941

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437061

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: P437061

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: P437220

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: P437223

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436949

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437074

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436968

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P436963

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P436963

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P436970

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

Reference Method: SM 2320 B-2011
Batch ID: P437039

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

Reference Method: SM 2540 C-2015
Batch ID: P437389

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437269

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437041

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437107

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: P436928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436941

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437061

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	111		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	102		P	85 - 115
Strontium	98.8		P	85 - 115
Tin	97.4		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	98.9		P	85 - 115
Zinc	97.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437061

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.2		P	85 - 115
Antimony	96.6		P	85 - 115
Arsenic	101		P	85 - 115
Barium	102		P	85 - 115
Beryllium	96.4		P	85 - 115
Boron	108		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	97.3		P	85 - 115
Cobalt	99.1		P	85 - 115
Copper	97.9		P	85 - 115
Lead	93.0		P	85 - 115
Manganese	96.6		P	85 - 115
Molybdenum	98.6		P	85 - 115
Nickel	98.4		P	85 - 115
Selenium	102		P	85 - 115
Silver	107		P	85 - 115
Thallium	99.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437220

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437223

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436949

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437074

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: P436968

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

Reference Method: EPA 8321B
Batch ID: P436963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	73.3		P	40 - 150
2,4,5-T	64.9		P	40 - 150
Acetaminophen	91.5		P	30 - 150
Acetamiprid	80.3		P	40 - 150
Afidopyropen	71.6		P	30 - 150
Bentazon	94.4		P	30 - 150
Benzovindiflupyr	78.5		P	40 - 150
Carbamazepine	79.7		P	40 - 150
Clothianidin	83.6		P	40 - 150
Dinotefuran	88.2		P	40 - 150
Diuron	72.8		P	40 - 150
Fenuron	88.5		P	40 - 150
Fluridone	81.1		P	40 - 150
Hydrocodone	93.5		P	40 - 150
Ibuprofen	58.9		P	40 - 150
Imazapyr	75.2		P	40 - 150
Imidacloprid	78.4		P	40 - 150
Linuron	71.7		P	40 - 150
Mandestrobin	85.2		P	40 - 150
MCPP	75.0		P	40 - 150
Naproxen	60.1		P	40 - 150
Primidone	87.6		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P436963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	77.8		P	40 - 150
Silvex	72.0		P	40 - 150
Thiamethoxam	82.3		P	40 - 150
Tolfenpyrad	49.2		P	30 - 150
Triclopyr	79.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P436970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	98.8		P	40 - 160
Endothall	94.2		P	40 - 160
Glufosinate	95.5		P	40 - 160
Glyphosate	94.9		P	40 - 160
Sucralose	98.0		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P437039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.6		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P437389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	108		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446327	Calcium	103		P	80 - 120
2446327	Iron	109	108	P/P	80 - 120
2446327	Magnesium	104		P	80 - 120
2446327	Potassium	101	100	P/P	80 - 120
2446327	Sodium	102		P	80 - 120
2446327	Strontium	98.4	97.4	P/P	80 - 120
2446327	Tin	96.2	95.6	P/P	80 - 120
2446327	Titanium	100	99.5	P/P	80 - 120
2446327	Vanadium	99.4	98.7	P/P	80 - 120
2446327	Zinc	94.8	94.1	P/P	80 - 120
2446815	Calcium	102		P	80 - 120
2446815	Iron	109		P	80 - 120
2446815	Magnesium	108		P	80 - 120
2446815	Potassium	101		P	80 - 120
2446815	Sodium	106		P	80 - 120
2446815	Strontium	96.4		P	80 - 120
2446815	Tin	95.9		P	80 - 120
2446815	Titanium	100		P	80 - 120
2446815	Vanadium	98.6		P	80 - 120
2446815	Zinc	94.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446327	Aluminum	96.8	97.1	P/P	80 - 120
2446327	Antimony	98.5	98.1	P/P	80 - 120
2446327	Arsenic	101	101	P/P	80 - 120
2446327	Barium	102	99.4	P/P	80 - 120
2446327	Beryllium	97.2	95.1	P/P	80 - 120
2446327	Boron	108	106	P/P	80 - 120
2446327	Cadmium	104	102	P/P	80 - 120
2446327	Chromium	99.2	98.3	P/P	80 - 120
2446327	Cobalt	96.1	94.2	P/P	80 - 120
2446327	Copper	93.3	92.8	P/P	80 - 120
2446327	Lead	94.2	92.9	P/P	80 - 120
2446327	Manganese	98.2	96.9	P/P	80 - 120
2446327	Molybdenum	102	102	P/P	80 - 120
2446327	Nickel	94.5	92.5	P/P	80 - 120
2446327	Selenium	99.6	98.7	P/P	80 - 120
2446327	Silver	109	107	P/P	80 - 120
2446327	Thallium	103	102	P/P	80 - 120
2446815	Aluminum	97.6		P	80 - 120
2446815	Antimony	99.2		P	80 - 120
2446815	Arsenic	99.9		P	80 - 120
2446815	Barium	102		P	80 - 120
2446815	Beryllium	93.9		P	80 - 120
2446815	Boron	109		P	80 - 120
2446815	Cadmium	107		P	80 - 120
2446815	Chromium	103		P	80 - 120
2446815	Cobalt	94.7		P	80 - 120
2446815	Copper	92.4		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446815	Lead	93.2		P	80 - 120
2446815	Manganese	101		P	80 - 120
2446815	Molybdenum	101		P	80 - 120
2446815	Nickel	92.8		P	80 - 120
2446815	Selenium	99.0		P	80 - 120
2446815	Silver	110		P	80 - 120
2446815	Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P437220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446550	Chloride	104		P	90 - 110
2446792	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P437223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446550	Sulfate	104		P	90 - 110
2446792	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P437032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446793	Ammonia-N	99.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P436949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446618	Kjeldahl Nitrogen	98.0	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P437074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445173	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P436968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446828	Total-P	103	100	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P436963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446847	2,4-D	105	111	P/P	40 - 150
2446847	2,4,5-T	105	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P436963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446847	Acetaminophen	142	147	P/P	30 - 150
2446847	Acetamiprid	76.6	86.2	P/P	40 - 150
2446847	Afidopyropen	72.9	76.2	P/P	30 - 150
2446847	Bentazon	73.4	77.0	P/P	30 - 150
2446847	Benzovindiflupyr	83.5	85.8	P/P	40 - 150
2446847	Carbamazepine	77.7	75.7	P/P	40 - 150
2446847	Clothianidin	109	111	P/P	40 - 150
2446847	Dinotefuran	105	104	P/P	40 - 150
2446847	Diuron	62.1	67.3	P/P	40 - 150
2446847	Fenuron	65.7	68.6	P/P	40 - 150
2446847	Fluridone	72.7	72.8	P/P	40 - 150
2446847	Hydrocodone	94.6	97.0	P/P	40 - 150
2446847	Ibuprofen	67.2	70.5	P/P	40 - 150
2446847	Imazapyr	101	106	P/P	40 - 150
2446847	Imidacloprid	137	141	P/P	40 - 150
2446847	Linuron	72.8	71.4	P/P	40 - 150
2446847	Mandestrobin	88.2	89.3	P/P	40 - 150
2446847	MCPP	102	109	P/P	40 - 150
2446847	Naproxen	69.8	63.5	P/P	40 - 150
2446847	Primidone	91.1	88.5	P/P	40 - 150
2446847	Pyraclostrobin	83.3	88.4	P/P	40 - 150
2446847	Silvex	96.7	105	P/P	40 - 150
2446847	Thiamethoxam	116	120	P/P	40 - 150
2446847	Tolfenpyrad	53.2	63.3	P/P	30 - 150
2446847	Triclopyr	113	122	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P436970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446847	Acesulfame K	144	146	P/P	40 - 150
2446847	AMPA	80.9	87.6	P/P	40 - 160
2446847	Endothall	93.2	97.4	P/P	40 - 160
2446847	Glufosinate	83.3	86.0	P/P	40 - 160
2446847	Glyphosate	77.4	77.4	P/P	40 - 160
2446847	Sucralose	116	111	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P437041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446797	Fluoride	99.7	100	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P437107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446828	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P436928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446834	Color (true)	0.640	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446656	Turbidity	0.995	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446327	Calcium	0.512	Spike	P	0 - 20
2446327	Iron	0.751	Spike	P	0 - 20
2446327	Magnesium	0.386	Spike	P	0 - 20
2446327	Potassium	0.762	Spike	P	0 - 20
2446327	Sodium	0.523	Spike	P	0 - 20
2446327	Strontium	0.994	Spike	P	0 - 20
2446327	Tin	0.648	Spike	P	0 - 20
2446327	Titanium	0.818	Spike	P	0 - 20
2446327	Vanadium	0.664	Spike	P	0 - 20
2446327	Zinc	0.735	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446327	Aluminum	0.312	Spike	P	0 - 20
2446327	Antimony	0.376	Spike	P	0 - 20
2446327	Arsenic	0.146	Spike	P	0 - 20
2446327	Barium	2.12	Spike	P	0 - 20
2446327	Beryllium	2.15	Spike	P	0 - 20
2446327	Boron	1.74	Spike	P	0 - 20
2446327	Cadmium	1.84	Spike	P	0 - 20
2446327	Chromium	0.902	Spike	P	0 - 20
2446327	Cobalt	1.93	Spike	P	0 - 20
2446327	Copper	0.559	Spike	P	0 - 20
2446327	Lead	1.39	Spike	P	0 - 20
2446327	Manganese	1.20	Spike	P	0 - 20
2446327	Molybdenum	0.334	Spike	P	0 - 20
2446327	Nickel	2.14	Spike	P	0 - 20
2446327	Selenium	0.934	Spike	P	0 - 20
2446327	Silver	1.86	Spike	P	0 - 20
2446327	Thallium	0.880	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446550	Chloride	1.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446550	Sulfate	2.33	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446793	Ammonia-N	2.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446618	Kjeldahl Nitrogen	3.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445173	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446828	Total-P	1.83	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P436963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446847	2,4-D	6.01	Spike	P	0 - 30
2446847	2,4,5-T	4.11	Spike	P	0 - 30
2446847	Acetaminophen	2.87	Spike	P	0 - 30
2446847	Acetamiprid	11.8	Spike	P	0 - 30
2446847	Afidopyropen	4.42	Spike	P	0 - 30
2446847	Bentazon	3.35	Spike	P	0 - 30
2446847	Benzovindiflupyr	2.75	Spike	P	0 - 30
2446847	Carbamazepine	2.69	Spike	P	0 - 30
2446847	Clothianidin	1.26	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P436963

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446847	Dinotefuran	0.516	Spike	P	0 - 30
2446847	Diuron	8.08	Spike	P	0 - 30
2446847	Fenuron	4.37	Spike	P	0 - 30
2446847	Fluridone	0.209	Spike	P	0 - 30
2446847	Hydrocodone	2.52	Spike	P	0 - 30
2446847	Ibuprofen	4.80	Spike	P	0 - 30
2446847	Imazapyr	5.51	Spike	P	0 - 30
2446847	Imidacloprid	2.94	Spike	P	0 - 30
2446847	Linuron	1.98	Spike	P	0 - 30
2446847	Mandestrobin	1.19	Spike	P	0 - 30
2446847	MCPPP	6.39	Spike	P	0 - 30
2446847	Naproxen	9.55	Spike	P	0 - 30
2446847	Primidone	2.87	Spike	P	0 - 30
2446847	Pyraclostrobin	5.94	Spike	P	0 - 30
2446847	Silvex	8.42	Spike	P	0 - 30
2446847	Thiamethoxam	3.31	Spike	P	0 - 30
2446847	Tolfenpyrad	17.2	Spike	P	0 - 30
2446847	Triclopyr	7.65	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P436970

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446847	Acesulfame K	0.773	Spike	P	0 - 30
2446847	AMPA	7.98	Spike	P	0 - 30
2446847	Endothall	4.48	Spike	P	0 - 30
2446847	Glufosinate	3.24	Spike	P	0 - 30
2446847	Glyphosate	0.0289	Spike	P	0 - 30
2446847	Sucralose	4.62	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P437039

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446797	Total Alkalinity	0.577	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015

Batch ID: P437389

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446593	TDS	6.02	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P437041

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446797	Fluoride	0.492	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P437107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446828	Organic Carbon	0.151	Sample	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2446856

Field Sample ID: G2SW0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.7	P	30 - 160
EPA 8321B	Diuron-d6	38.5	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.8	P	30 - 160
EPA 8321B	Primidone-d5	50.8	P	30 - 160
EPA 8321B	Sucralose-d6	97.5	P	30 - 160

Lab Sample ID: 2446857

Field Sample ID: G2SW0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.3	P	30 - 160
EPA 8321B	Diuron-d6	46.2	P	30 - 160
EPA 8321B	Endothall-d6	97.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.6	P	30 - 160
EPA 8321B	Primidone-d5	63.9	P	30 - 160
EPA 8321B	Sucralose-d6	96.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122317

Included Lab Sample IDs: 2446826, 2446827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 110
Color (true)	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122323

Included Lab Sample IDs: 2446826, 2446827

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

Reference Method: SM 2320 B-2011

Run ID: A122379

Included Lab Sample IDs: 2446826, 2446827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	96.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122379

Included Lab Sample IDs: 2446826, 2446827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122380

Included Lab Sample IDs: 2446828, 2446829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122383

Included Lab Sample IDs: 2446828, 2446829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.9	P/P	90 - 110
Total-P	99.9	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122397

Included Lab Sample IDs: 2446828, 2446829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	92.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122402

Included Lab Sample IDs: 2446828, 2446829

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122402

Included Lab Sample IDs: 2446828, 2446829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122415

Included Lab Sample IDs: 2446856, 2446857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	98.5	99.7	P/P	60 - 160
AMPA	99.7	101	P/P	60 - 160
Endothall	89.6	91.7	P/P	60 - 160
Endothall	97.7	89.6	P/P	60 - 160
Glufosinate	93.1	97.8	P/P	60 - 160
Glufosinate	97.8	96.8	P/P	60 - 160
Glyphosate	103	96.4	P/P	60 - 160
Glyphosate	92.0	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122422

Included Lab Sample IDs: 2446856, 2446857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	119	P/P	60 - 160
Acesulfame K	119	152	P/P	60 - 160
Sucralose	110	110	P/P	60 - 160
Sucralose	110	110	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A122423

Included Lab Sample IDs: 2446828, 2446829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122425

Included Lab Sample IDs: 2446862, 2446863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.5	97.7	P/P	90 - 110
Arsenic	95.2	95.6	P/P	90 - 110
Barium	98.3	98.0	P/P	90 - 110
Beryllium	97.3	96.7	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Cobalt	94.7	94.0	P/P	90 - 110
Copper	92.5	92.1	P/P	90 - 110
Lead	92.8	92.9	P/P	90 - 110
Manganese	103	102	P/P	90 - 110
Molybdenum	98.2	98.5	P/P	90 - 110
Nickel	92.9	92.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122425

Included Lab Sample IDs: 2446862, 2446863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	99.2	98.5	P/P	90 - 110
Silver	100	99.8	P/P	90 - 110
Thallium	99.1	98.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122437

Included Lab Sample IDs: 2446856, 2446857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.0	82.3	P/P	50 - 150
2,4,5-T	82.9	85.3	P/P	50 - 150
Acetaminophen	123	122	P/P	60 - 160
Acetamiprid	106	105	P/P	50 - 150
Afidopyropen	98.4	97.1	P/P	50 - 150
Bentazon	105	103	P/P	50 - 160
Benzovindiflupyr	106	106	P/P	50 - 150
Carbamazepine	99.2	100	P/P	60 - 150
Clothianidin	101	108	P/P	60 - 150
Dinotefuran	101	103	P/P	50 - 150
Diuron	109	110	P/P	60 - 160
Fenuron	106	109	P/P	60 - 150
Fluridone	99.6	113	P/P	60 - 160
Hydrocodone	112	113	P/P	60 - 150
Ibuprofen	85.9	76.6	P/P	50 - 160
Imazapyr	90.0	83.1	P/P	50 - 150
Imidacloprid	95.9	100	P/P	60 - 150
Linuron	105	105	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	97.4	85.1	P/P	50 - 150
Naproxen	86.1	100	P/P	50 - 160
Primidone	102	99.1	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Silvex	81.0	75.3	P/P	50 - 150
Thiamethoxam	106	108	P/P	50 - 150
Tolfenpyrad	98.7	97.4	P/P	60 - 150
Triclopyr	94.2	90.0	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122441

Included Lab Sample IDs: 2446862, 2446863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	101	P/P	90 - 110
Iron	100	99.5	P/P	90 - 110
Magnesium	100	99.7	P/P	90 - 110
Potassium	99.3	98.2	P/P	90 - 110
Sodium	100	99.3	P/P	90 - 110
Strontium	97.1	97.3	P/P	90 - 110
Tin	99.4	99.2	P/P	90 - 110
Titanium	99.7	99.3	P/P	90 - 110
Vanadium	99.0	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122441

Included Lab Sample IDs: 2446862, 2446863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	99.3	98.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122445

Included Lab Sample IDs: 2446862, 2446863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	94.9	96.6	P/P	90 - 110
Boron	103	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122479

Included Lab Sample IDs: 2446826, 2446827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	102	P/P	90 - 110
Sulfate	104	102	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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	100				0.640	
EPA 180.1 Rev. 2.0	Turbidity	104				0.995	
EPA 200.7 Rev. 4.4	Calcium	104	103	102			0.512
	Iron	111	109	108	109		0.751
	Magnesium	104	104	108			0.386
	Potassium	101	101	100	101		0.762
	Sodium	102	102	106			0.523
	Strontium	98.8	98.4	97.4	96.4		0.994
	Tin	97.4	96.2	95.6	95.9		0.648
	Titanium	101	100	99.5	100		0.818
	Vanadium	98.9	99.4	98.7	98.6		0.664
	Zinc	97.3	94.8	94.1	94.9		0.735
EPA 200.8 Rev. 5.4	Aluminum	98.2	96.8	97.1	97.6		0.312
	Antimony	96.6	98.5	98.1	99.2		0.376
	Arsenic	101	101	101	99.9		0.146
	Barium	102	102	99.4	102		2.12
	Beryllium	96.4	97.2	95.1	93.9		2.15
	Boron	108	108	106	109		1.74
	Cadmium	100	104	102	107		1.84
	Chromium	97.3	99.2	98.3	103		0.902
	Cobalt	99.1	96.1	94.2	94.7		1.93
	Copper	97.9	93.3	92.8	92.4		0.559
	Lead	93.0	94.2	92.9	93.2		1.39
	Manganese	96.6	98.2	96.9	101		1.20
	Molybdenum	98.6	102	102	101		0.334
	Nickel	98.4	94.5	92.5	92.8		2.14
	Selenium	102	99.6	98.7	99.0		0.934
	Silver	107	109	107	110		1.86
	Thallium	99.6	103	102	102		0.880
EPA 300.0 Rev. 2.1	Chloride	103	104	103		1.38	
	Sulfate	103	104	102		2.33	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	99.4	102			2.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.9	98.0	102			3.09
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	99.4	103	100			1.83
EPA 8321B	2,4-D	73.3	105	111			6.01
	2,4,5-T	64.9	105	109			4.11
	Acesulfame K	101	144	146			0.773
	Acetaminophen	91.5	142	147			2.87
	Acetamiprid	80.3	76.6	86.2			11.8
	Afidopyropen	71.6	72.9	76.2			4.42
	AMPA	98.8	80.9	87.6			7.98
	Bentazon	94.4	73.4	77.0			3.35
	Benzovindiflupyr	78.5	83.5	85.8			2.75
	Carbamazepine	79.7	77.7	75.7			2.69
	Clothianidin	83.6	109	111			1.26
	Dinotefuran	88.2	105	104			0.516
	Diuron	72.8	62.1	67.3			8.08
	Endothall	94.2	93.2	97.4			4.48
	Fenuron	88.5	65.7	68.6			4.37
	Fluridone	81.1	72.7	72.8			0.209
	Glufosinate	95.5	83.3	86.0			3.24
	Glyphosate	94.9	77.4	77.4			0.0289
	Hydrocodone	93.5	94.6	97.0			2.52

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Ibuprofen	58.9	67.2	70.5			4.80
	Imazapyr	75.2	101	106			5.51
	Imidacloprid	78.4	137	141			2.94
	Linuron	71.7	72.8	71.4			1.98
	Mandestrobin	85.2	88.2	89.3			1.19
	MCPP	75.0	102	109			6.39
	Naproxen	60.1	69.8	63.5			9.55
	Primidone	87.6	91.1	88.5			2.87
	Pyraclostrobin	77.8	83.3	88.4			5.94
	Silvex	72.0	96.7	105			8.42
	Sucralose	98.0	116	111			4.62
	Thiamethoxam	82.3	116	120			3.31
	Tolfenpyrad	49.2	53.2	63.3			17.2
	Triclopyr	79.8	113	122			7.65
SM 2320 B-2011	Total Alkalinity	97.6				0.577	
SM 2540 C-2015	TDS	93.2				6.02	
SM 2540 D-2015	TSS	108					
SM 4500-F- C-2011	Fluoride	102	99.7	100			0.492
SM 5310 B-2011	Organic Carbon	99.0	102			0.151	

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2446826, 2446827
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2446826, 2446827
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2446862, 2446863
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2446862, 2446863
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2446826, 2446827
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2446826, 2446827
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2446828, 2446829
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2446828, 2446829
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2446828, 2446829
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2446828, 2446829
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2446856, 2446857
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2446826, 2446827
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2446862, 2446863
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2446826, 2446827
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2446826, 2446827
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2446826, 2446827
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2446828, 2446829

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	10/24/2023			10/24/2023 15:19	Samantha L Bates	2446827
	10/24/2023			10/24/2023 15:38	Samantha L Bates	2446826
EPA 180.1 Rev. 2.0	10/24/2023			10/24/2023 14:36	Anna M. Plaviak	2446826, 2446827
EPA 200.7 Rev. 4.4	10/24/2023	10/26/2023 14:45	George D Taylor	10/30/2023 21:02	Chase Roberts	2446862
	10/24/2023	10/26/2023 14:45	George D Taylor	10/30/2023 21:10	Chase Roberts	2446863
EPA 200.8 Rev. 5.4	10/24/2023	10/26/2023 14:45	George D Taylor	10/27/2023 21:01	Conrad Hartmann	2446862
	10/24/2023	10/26/2023 14:45	George D Taylor	10/27/2023 21:11	Conrad Hartmann	2446863
	10/24/2023	10/26/2023 14:45	George D Taylor	10/30/2023 16:51	Conrad Hartmann	2446862
	10/24/2023	10/26/2023 14:45	George D Taylor	10/30/2023 16:58	Conrad Hartmann	2446863
EPA 300.0 Rev. 2.1	10/24/2023			10/31/2023 12:00	James L Waggeberby	2446826
	10/24/2023			10/31/2023 12:15	James L Waggeberby	2446827
EPA 350.1 Rev. 2.0	10/24/2023			10/26/2023 10:20	Ping Hua	2446828
	10/24/2023			10/26/2023 10:21	Ping Hua	2446829
EPA 351.2 Rev. 2.0	10/24/2023	10/25/2023 10:05	Samantha L Bates	10/26/2023 13:12	Samantha L Bates	2446828
	10/24/2023	10/25/2023 10:05	Samantha L Bates	10/26/2023 13:14	Samantha L Bates	2446829
EPA 353.2 Rev. 2.0	10/24/2023			10/26/2023 15:12	Fadila Guebre	2446828
	10/24/2023			10/26/2023 15:49	Fadila Guebre	2446829
EPA 365.1 Rev. 2.0	10/24/2023	10/25/2023 15:30	Simonne.V. Calhoun	10/26/2023 10:41	James L Waggeberby	2446828
	10/24/2023	10/25/2023 15:30	Simonne.V. Calhoun	10/26/2023 10:51	James L Waggeberby	2446829
EPA 8321B	10/24/2023	10/26/2023 09:00	Hoor Shaik	10/27/2023 17:34	Juyoung Kim	2446856
	10/24/2023	10/26/2023 09:00	Hoor Shaik	10/27/2023 17:52	Juyoung Kim	2446857
	10/24/2023	10/26/2023 09:30	Hana Lee	10/26/2023 11:45	Tae K Lee	2446856
	10/24/2023	10/26/2023 09:30	Hana Lee	10/26/2023 12:13	Tae K Lee	2446857
	10/24/2023	10/26/2023 09:30	Hana Lee	10/27/2023 13:06	Tae K Lee	2446856
	10/24/2023	10/26/2023 09:30	Hana Lee	10/27/2023 13:34	Tae K Lee	2446857
SM 2320 B-2011	10/24/2023			10/25/2023 23:31	Dale L. Simmons	2446826
	10/24/2023			10/25/2023 23:44	Dale L. Simmons	2446827
SM 2340 B-2011	10/24/2023			10/30/2023 21:02	Chase Roberts	2446862
	10/24/2023			10/30/2023 21:10	Chase Roberts	2446863
SM 2540 C-2015	10/24/2023			10/27/2023 16:33	Yijie Li	2446826, 2446827
SM 2540 D-2015	10/24/2023			10/27/2023 16:33	Yijie Li	2446826, 2446827
SM 4500-F- C-2011	10/24/2023			10/25/2023 23:31	Dale L. Simmons	2446826
	10/24/2023			10/25/2023 23:44	Dale L. Simmons	2446827
SM 5310 B-2011	10/24/2023			10/26/2023 23:58	Khloe J Berg	2446828
	10/24/2023			10/27/2023 10:06	Khloe J Berg	2446829