

Chemical Analysis Report

CEN-DIST-2023-11-29-03

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

Event Description: **Run 23**
Request ID: **RQ-2023-11-27-10**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Matthew Bearden

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 15-DEC-2023 10:52



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: DEAD RIVER AT 50M FROM S OF US 441
(2817C)**

Collection Date/Time: 11/28/2023 11:37

Field ID: G1CE0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453417	DEP SOP: NU-094-1	Color (true)	14		PCU	P438281	
	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P438292	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P438417	
		Sulfate	10		mg SO4/L	P438418	
	SM 2320 B-2011	Total Alkalinity	87		mg CaCO3/L	P438459	
	SM 2540 C-2015	TDS	164		mg/L	P438789	
	SM 2540 D-2015	TSS	9	I	mg/L	P438694	
	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P438462	
2453418	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P438566	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P438389	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P438472	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P438485	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P438441	

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: FB

Collection Date/Time: 11/28/2023 12:16

Field ID: FB_11282023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453419	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P438281	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P438292	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P438737	
		Sulfate	0.20	U	mg SO4/L	P438740	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P438459	
	SM 2540 C-2015	TDS	15	U	mg/L	P438788	
	SM 2540 D-2015	TSS	2	U	mg/L	P438693	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P438462	
2453420	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P438566	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P438389	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P438472	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P438485	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P438441	
2453426	EPA 8321B	2,4-D	0.0020	U	ug/L	P438273	
		Acesulfame K	0.10	U	ug/L	P438271	
		2,4,5-T	0.0040	U	ug/L	P438273	
		AMPA	0.10	U	ug/L	P438271	
		Acetaminophen	0.0080	U	ug/L	P438273	
		Acetamiprid	0.0020	U	ug/L	P438273	
		Endothall	0.25	U	ug/L	P438271	
		Glufosinate	0.10	U	ug/L	P438271	
		Glyphosate	0.10	U	ug/L	P438271	
		Afidopyropen	0.0020	U	ug/L	P438273	
		Bentazon	8.0E-04	U	ug/L	P438273	
		Sucralose	0.010	U	ug/L	P438271	
		Benzovindiflupyr	0.0020	U	ug/L	P438273	
		Carbamazepine	8.0E-04	U	ug/L	P438273	
		Clothianidin	0.0020	U	ug/L	P438273	
		Dinotefuran	0.0020	U	ug/L	P438273	
		Diuron	0.0020	U	ug/L	P438273	
		Fenuron	0.032	U	ug/L	P438273	
		Fluridone	8.0E-04	U	ug/L	P438273	
		Imazapyr	0.0040	U	ug/L	P438273	
		Hydrocodone	0.0020	U	ug/L	P438273	
		Ibuprofen	0.080	U	ug/L	P438273	
		Imidacloprid	0.0020	U	ug/L	P438273	
		Linuron	0.0040	U	ug/L	P438273	
		Mandestrobin	0.0020	U	ug/L	P438273	
		MCPP	0.0020	U	ug/L	P438273	
		Naproxen	0.0080	U	ug/L	P438273	
		Primidone	0.0040	U	ug/L	P438273	
		Pyraclostrobin	0.0020	U	ug/L	P438273	
		Silvex	0.0040	U	ug/L	P438273	
		Thiamethoxam	0.0020	U	ug/L	P438273	

Field ID: FB_11282023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453426	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P438273	
		Triclopyr	0.0040	U	ug/L	P438273	
2453428	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P438349	
		Iron	30	U	ug/L	P438349	
		Magnesium	0.040	U	mg/L	P438349	
		Potassium	0.30	U	mg/L	P438349	
		Sodium	0.50	U	mg/L	P438349	
		Strontium	2.0	U	ug/L	P438349	
		Tin	3.0	U	ug/L	P438349	
		Titanium	0.75	U	ug/L	P438349	
		Vanadium	2.0	U	ug/L	P438349	
		Zinc	5.0	U	ug/L	P438349	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P438349	
		Antimony	0.050	U	ug/L	P438349	
		Arsenic	0.050	U	ug/L	P438349	
		Barium	0.20	U	ug/L	P438349	
		Beryllium	0.010	U	ug/L	P438349	
		Boron	2.0	U	ug/L	P438349	
		Cadmium	0.020	U	ug/L	P438349	
		Chromium	0.40	U	ug/L	P438349	
		Cobalt	0.020	U	ug/L	P438349	
		Copper	0.40	U	ug/L	P438349	
		Lead	0.20	U	ug/L	P438349	
		Manganese	0.10	U	ug/L	P438349	
		Molybdenum	0.15	U	ug/L	P438349	
		Nickel	0.50	U	ug/L	P438349	
		Selenium	0.20	U	ug/L	P438349	
		Silver	0.010	U	ug/L	P438349	
		Thallium	0.10	U	ug/L	P438349	

Sample Location: HICKS DITCH SE OF EAST RD

Collection Date/Time: 11/28/2023 10:45

Field ID: G1CE0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453425	EPA 8321B	2,4-D	0.0020	U	ug/L	P438273	
		Acesulfame K	0.10	U	ug/L	P438271	
		2,4,5-T	0.0040	U	ug/L	P438273	
		AMPA	0.10	U	ug/L	P438271	
		Acetaminophen	0.0080	U	ug/L	P438273	
		Acetamiprid	0.0020	U	ug/L	P438273	
		Endothall	0.25	U	ug/L	P438271	
		Glufosinate	0.10	U	ug/L	P438271	
		Glyphosate	0.16	I	ug/L	P438271	
		Afidopyropen	0.0020	U	ug/L	P438273	
		Bentazon	8.0E-04	U	ug/L	P438273	
		Sucralose	0.010	U	ug/L	P438271	
		Benzovindiflupyr	0.0020	U	ug/L	P438273	
		Carbamazepine	8.0E-04	U	ug/L	P438273	
		Clothianidin	0.0020	U	ug/L	P438273	
		Dinotefuran	0.0020	U	ug/L	P438273	
		Diuron	0.0020	U	ug/L	P438273	
		Fenuron	0.032	U	ug/L	P438273	
		Fluridone	8.0E-04	U	ug/L	P438273	
		Imazapyr	0.0045	I	ug/L	P438273	
		Hydrocodone	0.0020	U	ug/L	P438273	
		Ibuprofen	0.080	U	ug/L	P438273	
		Imidacloprid	0.0020	U	ug/L	P438273	
		Linuron	0.0040	U	ug/L	P438273	
		Mandestrobin	0.0020	U	ug/L	P438273	
		MCPP	0.0020	U	ug/L	P438273	
		Naproxen	0.0080	U	ug/L	P438273	
		Primidone	0.0040	U	ug/L	P438273	
		Pyraclostrobin	0.0020	U	ug/L	P438273	
		Silvex	0.0040	U	ug/L	P438273	
		Thiamethoxam	0.0020	U	ug/L	P438273	
		Tolfenpyrad	0.0020	U	ug/L	P438273	
		Triclopyr	0.0040	U	ug/L	P438273	
2453427	EPA 200.7 Rev. 4.4	Calcium	4.43		mg/L	P438349	
		Iron	570		ug/L	P438349	
		Magnesium	2.02		mg/L	P438349	
		Potassium	3.2		mg/L	P438349	
		Sodium	7.2		mg/L	P438349	
		Strontium	19.8		ug/L	P438349	
		Tin	3.0	U	ug/L	P438349	
		Titanium	0.75	U	ug/L	P438349	
		Vanadium	2.0	U	ug/L	P438349	
		Zinc	5.0	U	ug/L	P438349	
	EPA 200.8 Rev. 5.4	Aluminum	278		ug/L	P438349	

Field ID: G1CE0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453427	EPA 200.8 Rev. 5.4	Antimony	0.061	I	ug/L	P438349	
		Arsenic	0.64		ug/L	P438349	
		Barium	18.6		ug/L	P438349	
		Beryllium	0.070		ug/L	P438349	
		Boron	20.7		ug/L	P438349	
		Cadmium	0.029	I	ug/L	P438349	
		Chromium	1.3	I	ug/L	P438564	
		Cobalt	0.341		ug/L	P438349	
		Copper	0.75	I	ug/L	P438349	
		Lead	0.37	I	ug/L	P438349	
		Manganese	21.9		ug/L	P438349	
		Molybdenum	0.26	I	ug/L	P438349	
		Nickel	1.0	I	ug/L	P438564	
		Selenium	0.28	I	ug/L	P438349	
		Silver	0.010	U	ug/L	P438349	
		Thallium	0.10	U	ug/L	P438349	
	SM 2340 B-2011	Hardness	19.4		mg/L	P438349	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438292

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438349

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	35	I	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: P438349

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	8.3		ug/L
Cobalt	0.026	I	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.17	I	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.97	I	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438564

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Nickel	0.50	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438566

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438389

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438472

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438485

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

Reference Method: EPA 8321B
Batch ID: P438271

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P438271

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P438273

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
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: P438459

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

Reference Method: SM 2540 C-2015
Batch ID: P438788

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P438789

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P438693

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P438694

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P438441

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: P438281

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438292

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	96.5		P	85 - 115
Iron	89.0		P	85 - 115
Magnesium	91.0		P	85 - 115
Potassium	87.7		P	85 - 115
Sodium	88.8		P	85 - 115
Strontium	100		P	85 - 115
Tin	99.5		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.3		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Barium	102		P	85 - 115
Beryllium	95.1		P	85 - 115
Boron	98.5		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	99.7		P	85 - 115
Cobalt	97.3		P	85 - 115
Copper	98.0		P	85 - 115
Lead	96.3		P	85 - 115
Manganese	98.0		P	85 - 115
Molybdenum	99.0		P	85 - 115
Nickel	97.6		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	101		P	85 - 115
Thallium	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	101		P	85 - 115
Nickel	98.3		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438472

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: P438485

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

Reference Method: EPA 8321B
Batch ID: P438271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	132		P	40 - 150
AMPA	93.4		P	40 - 160
Endothall	111		P	40 - 160
Glufosinate	90.4		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P438271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	96.3		P	40 - 160
Sucralose	114		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	108		P	40 - 150
2,4,5-T	101		P	40 - 150
Acetaminophen	95.9		P	30 - 150
Acetamiprid	90.9		P	40 - 150
Afidopyropen	81.0		P	30 - 150
Bentazon	79.4		P	30 - 150
Benzovindiflupyr	83.8		P	40 - 150
Carbamazepine	88.6		P	40 - 150
Clothianidin	94.1		P	40 - 150
Dinotefuran	105		P	40 - 150
Diuron	81.4		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	95.2		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	67.7		P	40 - 150
Imazapyr	90.0		P	40 - 150
Imidacloprid	89.2		P	40 - 150
Linuron	84.8		P	40 - 150
Mandestrobin	93.0		P	40 - 150
MCPP	91.1		P	40 - 150
Naproxen	73.3		P	40 - 150
Primidone	87.5		P	40 - 150
Pyraclostrobin	76.5		P	40 - 150
Silvex	85.5		P	40 - 150
Thiamethoxam	95.8		P	40 - 150
Tolfenpyrad	50.8		P	30 - 150
Triclopyr	115		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P438459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.2		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	92.4		P	85 - 115

Reference Method: SM 2540 C-2015
Batch ID: P438789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	99.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P438693

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

Reference Method: SM 2540 D-2015
Batch ID: P438694

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

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

Reference Method: SM 5310 B-2011
Batch ID: P438441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453066	Calcium	100		P	80 - 120
2453066	Iron	98.1	99.2	P/P	80 - 120
2453066	Magnesium	96.5	99.9	P/P	80 - 120
2453066	Potassium	105	107	P/P	80 - 120
2453066	Sodium	98.2	97.4	P/P	80 - 120
2453066	Strontium	93.6	92.9	P/P	80 - 120
2453066	Tin	94.8	95.8	P/P	80 - 120
2453066	Titanium	95.0	95.0	P/P	80 - 120
2453066	Vanadium	96.3	97.1	P/P	80 - 120
2453066	Zinc	93.1	93.5	P/P	80 - 120
2453526	Calcium	97.5		P	80 - 120
2453526	Iron	99.5		P	80 - 120
2453526	Magnesium	100		P	80 - 120
2453526	Potassium	98.9		P	80 - 120
2453526	Sodium	94.2		P	80 - 120
2453526	Strontium	93.6		P	80 - 120
2453526	Tin	92.4		P	80 - 120
2453526	Titanium	94.7		P	80 - 120
2453526	Vanadium	93.1		P	80 - 120
2453526	Zinc	92.6		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453066	Aluminum	96.9	97.2	P/P	80 - 120
2453066	Antimony	103	103	P/P	80 - 120
2453066	Arsenic	101	101	P/P	80 - 120
2453066	Barium	103	102	P/P	80 - 120
2453066	Beryllium	95.1	94.0	P/P	80 - 120
2453066	Boron	97.1	100	P/P	80 - 120
2453066	Cadmium	101	102	P/P	80 - 120
2453066	Chromium	100	102	P/P	80 - 120
2453066	Cobalt	96.4	96.5	P/P	80 - 120
2453066	Copper	94.1	95.4	P/P	80 - 120
2453066	Lead	96.6	96.0	P/P	80 - 120
2453066	Manganese	99.6	100	P/P	80 - 120
2453066	Molybdenum	102	102	P/P	80 - 120
2453066	Nickel	96.6	97.4	P/P	80 - 120
2453066	Selenium	99.6	98.7	P/P	80 - 120
2453066	Silver	102	101	P/P	80 - 120
2453066	Thallium	101	101	P/P	80 - 120
2453526	Aluminum	97.5		P	80 - 120
2453526	Antimony	98.1		P	80 - 120
2453526	Arsenic	97.0		P	80 - 120
2453526	Barium	99.1		P	80 - 120
2453526	Beryllium	91.1		P	80 - 120
2453526	Boron	104		P	80 - 120
2453526	Cadmium	98.8		P	80 - 120
2453526	Chromium	100		P	80 - 120
2453526	Cobalt	96.3		P	80 - 120
2453526	Copper	98.2		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453526	Lead	95.3		P	80 - 120
2453526	Manganese	100		P	80 - 120
2453526	Molybdenum	96.9		P	80 - 120
2453526	Nickel	97.9		P	80 - 120
2453526	Selenium	97.4		P	80 - 120
2453526	Silver	98.6		P	80 - 120
2453526	Thallium	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454126	Chromium	103	102	P/P	80 - 120
2454126	Nickel	93.7	93.2	P/P	80 - 120
2454174	Chromium	103		P	80 - 120
2454174	Nickel	93.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453048	Chloride	103		P	90 - 110
2453122	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453048	Sulfate	102		P	90 - 110
2453122	Sulfate	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453434	Chloride	102		P	90 - 110
2453693	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453434	Sulfate	102		P	90 - 110
2453693	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453128	Ammonia-N	98.2	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453429	Kjeldahl Nitrogen	109	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453418	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453418	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P438271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452969	Acesulfame K	87.0	94.3	P/P	40 - 150
2452969	AMPA	76.0	82.1	P/P	40 - 160
2452969	Endothall	108	102	P/P	40 - 160
2452969	Glufosinate	87.9	83.1	P/P	40 - 160
2452969	Glyphosate	87.1	90.1	P/P	40 - 160
2452969	Sucralose	68.4	66.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452969	2,4-D	84.0	100	P/P	40 - 150
2452969	2,4,5-T	78.7	88.6	P/P	40 - 150
2452969	Acetaminophen	80.7	89.5	P/P	30 - 150
2452969	Acetamiprid	73.3	82.9	P/P	40 - 150
2452969	Afidopyropen	74.8	79.3	P/P	30 - 150
2452969	Bentazon	30.6	36.1	P/P	30 - 150
2452969	Benzovindiflupyr	73.9	81.7	P/P	40 - 150
2452969	Carbamazepine	62.6	68.5	P/P	40 - 150
2452969	Clothianidin	94.0	106	P/P	40 - 150
2452969	Dinotefuran	93.6	104	P/P	40 - 150
2452969	Diuron	56.5	60.3	P/P	40 - 150
2452969	Fenuron	75.2	77.0	P/P	40 - 150
2452969	Fluridone	67.1	73.3	P/P	40 - 150
2452969	Hydrocodone	85.6	93.3	P/P	40 - 150
2452969	Ibuprofen	57.3	64.1	P/P	40 - 150
2452969	Imazapyr	94.3	103	P/P	40 - 150
2452969	Imidacloprid	113	124	P/P	40 - 150
2452969	Linuron	65.4	70.1	P/P	40 - 150
2452969	Mandestrobin	80.1	87.4	P/P	40 - 150
2452969	MCP	75.5	90.1	P/P	40 - 150
2452969	Naproxen	85.2	72.9	P/P	40 - 150
2452969	Primidone	87.1	96.2	P/P	40 - 150
2452969	Pyraclostrobin	74.5	84.2	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P438273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452969	Silvex	83.7	83.0	P/P	40 - 150
2452969	Thiamethoxam	90.2	99.8	P/P	40 - 150
2452969	Tolfenpyrad	46.5	54.4	P/P	30 - 150
2452969	Triclopyr	89.1	84.0	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453619	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453621	Organic Carbon	96.7	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453326	Color (true)	3.68	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453326	Turbidity	18.9	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453066	Calcium	0.0760	Spike	P	0 - 20
2453066	Iron	1.20	Spike	P	0 - 20
2453066	Magnesium	2.02	Spike	P	0 - 20
2453066	Potassium	1.79	Spike	P	0 - 20
2453066	Sodium	0.527	Spike	P	0 - 20
2453066	Strontium	0.743	Spike	P	0 - 20
2453066	Tin	1.13	Spike	P	0 - 20
2453066	Titanium	0.0662	Spike	P	0 - 20
2453066	Vanadium	0.827	Spike	P	0 - 20
2453066	Zinc	0.419	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453066	Aluminum	0.297	Spike	P	0 - 20
2453066	Antimony	0.183	Spike	P	0 - 20
2453066	Arsenic	0.110	Spike	P	0 - 20
2453066	Barium	0.979	Spike	P	0 - 20
2453066	Beryllium	1.18	Spike	P	0 - 20
2453066	Boron	2.68	Spike	P	0 - 20
2453066	Cadmium	0.668	Spike	P	0 - 20
2453066	Chromium	1.66	Spike	P	0 - 20
2453066	Cobalt	0.0768	Spike	P	0 - 20
2453066	Copper	1.34	Spike	P	0 - 20
2453066	Lead	0.613	Spike	P	0 - 20
2453066	Manganese	0.766	Spike	P	0 - 20
2453066	Molybdenum	0.153	Spike	P	0 - 20
2453066	Nickel	0.827	Spike	P	0 - 20
2453066	Selenium	0.931	Spike	P	0 - 20
2453066	Silver	0.663	Spike	P	0 - 20
2453066	Thallium	0.119	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454126	Chromium	0.935	Spike	P	0 - 20
2454126	Nickel	0.505	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453048	Chloride	0.630	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453048	Sulfate	0.515	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453434	Chloride	3.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453434	Sulfate	6.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453128	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453429	Kjeldahl Nitrogen	3.86	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453418	NO2NO3-N	0.489	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P438485

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453418	Total-P	0.0225	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P438271

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452969	Acesulfame K	8.09	Spike	P	0 - 30
2452969	AMPA	7.70	Spike	P	0 - 30
2452969	Endothall	6.06	Spike	P	0 - 30
2452969	Glufosinate	5.55	Spike	P	0 - 30
2452969	Glyphosate	3.41	Spike	P	0 - 30
2452969	Sucralose	2.26	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P438273

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452969	2,4-D	17.7	Spike	P	0 - 30
2452969	2,4,5-T	11.9	Spike	P	0 - 30
2452969	Acetaminophen	10.4	Spike	P	0 - 30
2452969	Acetamiprid	12.3	Spike	P	0 - 30
2452969	Afidopyropen	5.84	Spike	P	0 - 30
2452969	Bentazon	16.5	Spike	P	0 - 30
2452969	Benzovindiflupyr	10.0	Spike	P	0 - 30
2452969	Carbamazepine	8.97	Spike	P	0 - 30
2452969	Clothianidin	11.6	Spike	P	0 - 30
2452969	Dinotefuran	10.8	Spike	P	0 - 30
2452969	Diuron	6.60	Spike	P	0 - 30
2452969	Fenuron	2.41	Spike	P	0 - 30
2452969	Fluridone	8.89	Spike	P	0 - 30
2452969	Hydrocodone	8.53	Spike	P	0 - 30
2452969	Ibuprofen	11.2	Spike	P	0 - 30
2452969	Imazapyr	8.94	Spike	P	0 - 30
2452969	Imidacloprid	9.25	Spike	P	0 - 30
2452969	Linuron	6.94	Spike	P	0 - 30
2452969	Mandestrobin	8.75	Spike	P	0 - 30
2452969	MCPP	17.6	Spike	P	0 - 30
2452969	Naproxen	15.6	Spike	P	0 - 30
2452969	Primidone	9.90	Spike	P	0 - 30
2452969	Pyraclostrobin	12.2	Spike	P	0 - 30
2452969	Silvex	0.806	Spike	P	0 - 30
2452969	Thiamethoxam	10.2	Spike	P	0 - 30
2452969	Tolfenpyrad	15.6	Spike	P	0 - 30
2452969	Triclopyr	5.90	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P438459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Total Alkalinity	0.587	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452745	TDS	6.91	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P438789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453076	TDS	7.79	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P438693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452745	TSS	7.41	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Fluoride	0.495	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P438441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453621	Organic Carbon	0.348	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2453425

Field Sample ID: G1CE0126

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	78.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.9	P	30 - 160
EPA 8321B	Diuron-d6	47.3	P	30 - 160
EPA 8321B	Endothall-d6	82.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.5	P	30 - 160
EPA 8321B	Primidone-d5	88.3	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160

Lab Sample ID: 2453426

Field Sample ID: FB_11282023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.6	P	30 - 160
EPA 8321B	Diuron-d6	72.8	P	30 - 160
EPA 8321B	Endothall-d6	78.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.4	P	30 - 160
EPA 8321B	Primidone-d5	79.6	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122937

Included Lab Sample IDs: 2453417, 2453419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122940

Included Lab Sample IDs: 2453417, 2453419

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122949

Included Lab Sample IDs: 2453417

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

Reference Method: EPA 8321B

Run ID: A122972

Included Lab Sample IDs: 2453425, 2453426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	94.3	P/P	50 - 150
2,4,5-T	103	107	P/P	50 - 150
Acetaminophen	110	107	P/P	60 - 160
Acetamiprid	105	107	P/P	50 - 150
Afidopyropen	98.0	100	P/P	50 - 150
Bentazon	92.0	90.9	P/P	50 - 160
Benzovindiflupyr	104	100	P/P	50 - 150
Carbamazepine	108	108	P/P	60 - 150
Clothianidin	100	105	P/P	60 - 150
Dinotefuran	111	110	P/P	50 - 150
Diuron	104	99.4	P/P	60 - 160
Fenuron	103	102	P/P	60 - 150
Fluridone	112	107	P/P	60 - 160
Hydrocodone	119	117	P/P	60 - 150
Ibuprofen	81.7	61.4	P/P	50 - 160
Imazapyr	85.9	89.4	P/P	50 - 150
Imidacloprid	94.0	96.7	P/P	60 - 150
Linuron	99.9	96.4	P/P	60 - 150
Mandestrobin	110	105	P/P	50 - 150
MCPP	96.3	94.2	P/P	50 - 150
Naproxen	125	98.4	P/P	50 - 160
Primidone	103	97.4	P/P	60 - 150
Pyraclostrobin	105	103	P/P	60 - 150
Silvex	106	103	P/P	50 - 150
Thiamethoxam	108	107	P/P	50 - 150
Tolfenpyrad	100	99.7	P/P	60 - 150
Triclopyr	93.1	92.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122977

Included Lab Sample IDs: 2453425, 2453426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.6	84.7	P/P	60 - 160
Endothall	99.6	109	P/P	60 - 160
Glufosinate	89.6	87.1	P/P	60 - 160
Glyphosate	91.0	92.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122994

Included Lab Sample IDs: 2453425, 2453426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	119	P/P	60 - 160
Sucralose	121	119	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A122996

Included Lab Sample IDs: 2453418, 2453420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122999

Included Lab Sample IDs: 2453427, 2453428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.6	96.6	P/P	90 - 110
Aluminum	99.7	99.5	P/P	90 - 110
Antimony	98.7	98.1	P/P	90 - 110
Antimony	99.6	100	P/P	90 - 110
Arsenic	101	99.3	P/P	90 - 110
Arsenic	98.0	96.5	P/P	90 - 110
Barium	100	99.7	P/P	90 - 110
Barium	98.9	97.9	P/P	90 - 110
Beryllium	96.0	94.7	P/P	90 - 110
Beryllium	98.4	97.7	P/P	90 - 110
Boron	101	95.9	P/P	90 - 110
Boron	100	99.8	P/P	90 - 110
Cadmium	100	98.3	P/P	90 - 110
Cadmium	100	99.7	P/P	90 - 110
Chromium	102	104	P/P	90 - 110
Cobalt	100	98.3	P/P	90 - 110
Cobalt	96.3	95.1	P/P	90 - 110
Copper	100	97.4	P/P	90 - 110
Copper	95.8	94.1	P/P	90 - 110
Lead	96.0	94.2	P/P	90 - 110
Lead	97.6	96.4	P/P	90 - 110
Manganese	100	99.4	P/P	90 - 110
Manganese	102	104	P/P	90 - 110
Molybdenum	100	99.2	P/P	90 - 110
Molybdenum	98.8	97.4	P/P	90 - 110
Nickel	101	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122999

Included Lab Sample IDs: 2453427, 2453428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	101	99.7	P/P	90 - 110
Selenium	96.8	96.7	P/P	90 - 110
Silver	98.7	96.4	P/P	90 - 110
Silver	99.0	98.4	P/P	90 - 110
Thallium	96.6	95.2	P/P	90 - 110
Thallium	98.7	97.7	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A123013

Included Lab Sample IDs: 2453417, 2453419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	94.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A123013

Included Lab Sample IDs: 2453417, 2453419

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123014

Included Lab Sample IDs: 2453418, 2453420

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A123024

Included Lab Sample IDs: 2453418, 2453420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123055

Included Lab Sample IDs: 2453418, 2453420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	97.5	P/P	90 - 110
Total-P	97.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123057

Included Lab Sample IDs: 2453418, 2453420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A123091

Included Lab Sample IDs: 2453427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	104	106	P/P	90 - 110
Nickel	96.6	96.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A123118

Included Lab Sample IDs: 2453419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123155

Included Lab Sample IDs: 2453427, 2453428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	95.9	98.3	P/P	90 - 110
Calcium	99.5	98.5	P/P	90 - 110
Iron	100	99.3	P/P	90 - 110
Iron	96.6	99.1	P/P	90 - 110
Magnesium	101	99.5	P/P	90 - 110
Magnesium	96.4	99.3	P/P	90 - 110
Potassium	96.0	97.8	P/P	90 - 110
Potassium	98.1	98.4	P/P	90 - 110
Sodium	94.9	96.4	P/P	90 - 110
Sodium	96.9	96.8	P/P	90 - 110
Strontium	94.0	98.4	P/P	90 - 110
Strontium	99.2	99.6	P/P	90 - 110
Tin	93.2	98.0	P/P	90 - 110
Tin	99.7	99.1	P/P	90 - 110
Titanium	92.7	97.1	P/P	90 - 110
Titanium	98.8	99.3	P/P	90 - 110
Vanadium	92.4	96.5	P/P	90 - 110
Vanadium	98.2	98.2	P/P	90 - 110
Zinc	92.5	96.7	P/P	90 - 110
Zinc	97.9	97.4	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	102					3.68	
EPA 180.1 Rev. 2.0	Turbidity	104					18.9	
EPA 200.7 Rev. 4.4	Calcium	96.5	100	97.5				0.0760
	Iron	89.0	98.1	99.2	99.5			1.20
	Magnesium	91.0	96.5	99.9	100			2.02
	Potassium	87.7	105	107	98.9			1.79
	Sodium	88.8	98.2	97.4	94.2			0.527
	Strontium	100	93.6	92.9	93.6			0.743
	Tin	99.5	94.8	95.8	92.4			1.13
	Titanium	102	95.0	95.0	94.7			0.0662
	Vanadium	102	96.3	97.1	93.1			0.827
	Zinc	99.9	93.1	93.5	92.6			0.419
EPA 200.8 Rev. 5.4	Aluminum	98.3	96.9	97.2	97.5			0.297
	Antimony	101	103	103	98.1			0.183
	Arsenic	100	101	101	97.0			0.110
	Barium	102	103	102	99.1			0.979
	Beryllium	95.1	95.1	94.0	91.1			1.18
	Boron	98.5	97.1	100	104			2.68
	Cadmium	100	101	102	98.8			0.668
	Chromium	99.7	100	102	100			1.66
	Chromium	101	103	102	103			0.935
	Cobalt	97.3	96.4	96.5	96.3			0.0768
	Copper	98.0	94.1	95.4	98.2			1.34
	Lead	96.3	96.6	96.0	95.3			0.613
	Manganese	98.0	99.6	100	100			0.766
	Molybdenum	99.0	102	102	96.9			0.153
	Nickel	97.6	96.6	97.4	97.9			0.827
	Nickel	98.3	93.7	93.2	93.1			0.505
	Selenium	99.7	99.6	98.7	97.4			0.931
	Silver	101	102	101	98.6			0.663
	Thallium	99.3	101	101	100			0.119
EPA 300.0 Rev. 2.1	Chloride	101	103	99.3			0.630	
	Chloride	101	102	103			3.69	
	Sulfate	102	102	99.8			0.515	
	Sulfate	101	102	103			6.92	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	98.2	99.6				1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	109	102				3.86
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0	98.5				0.489
EPA 365.1 Rev. 2.0	Total-P	103	104	104				0.0225
EPA 8321B	2,4-D	108	84.0	100				17.7
	2,4,5-T	101	78.7	88.6				11.9
	Acesulfame K	132	87.0	94.3				8.09
	Acetaminophen	95.9	80.7	89.5				10.4
	Acetamiprid	90.9	73.3	82.9				12.3
	Afidopyropen	81.0	74.8	79.3				5.84
	AMPA	93.4	76.0	82.1				7.70
	Bentazon	79.4	30.6	36.1				16.5
	Benzovindiflupyr	83.8	73.9	81.7				10.0
	Carbamazepine	88.6	62.6	68.5				8.97
	Clothianidin	94.1	94.0	106				11.6
	Dinotefuran	105	93.6	104				10.8
	Diuron	81.4	56.5	60.3				6.60
	Endothall	111	108	102				6.06
	Fenuron	103	75.2	77.0				2.41

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Fluridone	95.2	67.1	73.3		8.89
	Glufosinate	90.4	87.9	83.1		5.55
	Glyphosate	96.3	87.1	90.1		3.41
	Hydrocodone	105	85.6	93.3		8.53
	Ibuprofen	67.7	57.3	64.1		11.2
	Imazapyr	90.0	94.3	103		8.94
	Imidacloprid	89.2	113	124		9.25
	Linuron	84.8	65.4	70.1		6.94
	Mandestrobin	93.0	80.1	87.4		8.75
	MCPP	91.1	75.5	90.1		17.6
	Naproxen	73.3	85.2	72.9		15.6
	Primidone	87.5	87.1	96.2		9.90
	Pyraclostrobin	76.5	74.5	84.2		12.2
	Silvex	85.5	83.7	83.0		0.806
	Sucralose	114	68.4	66.9		2.26
	Thiamethoxam	95.8	90.2	99.8		10.2
	Tolfenpyrad	50.8	46.5	54.4		15.6
	Triclopyr	115	89.1	84.0		5.90
SM 2320 B-2011	Total Alkalinity	96.2			0.587	
SM 2540 C-2015	TDS	92.4			6.91	
	TDS	99.6			7.79	
SM 2540 D-2015	TSS	102			7.41	
	TSS	96.0				
SM 4500-F- C-2011	Fluoride	101	102	102		0.495
SM 5310 B-2011	Organic Carbon	97.2	96.7	96.3		0.348

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2453417, 2453419
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2453417, 2453419
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2453427, 2453428
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2453427, 2453428
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2453417, 2453419
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2453417, 2453419
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2453418, 2453420
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2453418, 2453420
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2453418, 2453420
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2453418, 2453420
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2453425, 2453426
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2453417, 2453419
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2453427
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2453417, 2453419
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2453417, 2453419
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2453417, 2453419
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2453418, 2453420

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	11/29/2023			11/29/2023 14:11	Chandler E Cox	2453417, 2453419
EPA 180.1 Rev. 2.0	11/29/2023			11/29/2023 13:51	Anna M. Plaviak	2453417
	11/29/2023			11/29/2023 13:52	Anna M. Plaviak	2453419
EPA 200.7 Rev. 4.4	11/29/2023	11/30/2023 12:55	George D Taylor	12/11/2023 22:46	McKinley C Carter	2453428
	11/29/2023	11/30/2023 12:55	George D Taylor	12/12/2023 01:56	McKinley C Carter	2453427
EPA 200.8 Rev. 5.4	11/29/2023	11/30/2023 12:55	George D Taylor	12/01/2023 16:04	Emily M Philpot	2453428
	11/29/2023	11/30/2023 12:55	George D Taylor	12/01/2023 19:52	Emily M Philpot	2453427
	11/29/2023	12/06/2023 15:10	George D Taylor	12/07/2023 16:14	Emily M Philpot	2453427
EPA 300.0 Rev. 2.1	11/29/2023			11/30/2023 21:03	James L Waggeberby	2453417
	11/29/2023			12/07/2023 16:35	James L Waggeberby	2453419
EPA 350.1 Rev. 2.0	11/29/2023			12/06/2023 10:57	Ping Hua	2453418
	11/29/2023			12/06/2023 10:59	Ping Hua	2453420
EPA 351.2 Rev. 2.0	11/29/2023	12/01/2023 12:09	Simonne.V. Calhoun	12/05/2023 11:41	Samantha L Bates	2453418
	11/29/2023	12/01/2023 12:09	Simonne.V. Calhoun	12/05/2023 11:43	Samantha L Bates	2453420
EPA 353.2 Rev. 2.0	11/29/2023			12/04/2023 12:41	Fadila Guebre	2453418
	11/29/2023			12/04/2023 12:53	Fadila Guebre	2453420
EPA 365.1 Rev. 2.0	11/29/2023	12/05/2023 12:17	Adam P Silver	12/06/2023 13:28	James L Waggeberby	2453420
	11/29/2023	12/05/2023 12:17	Adam P Silver	12/06/2023 13:36	James L Waggeberby	2453418
EPA 8321B	11/29/2023	11/30/2023 10:00	Hana Lee	11/30/2023 13:45	Tae K Lee	2453425
	11/29/2023	11/30/2023 10:00	Hana Lee	11/30/2023 13:59	Tae K Lee	2453426
	11/29/2023	11/30/2023 10:00	Hana Lee	12/01/2023 22:26	Tae K Lee	2453425
	11/29/2023	11/30/2023 10:00	Hana Lee	12/01/2023 22:40	Tae K Lee	2453426
	11/29/2023	11/30/2023 13:00	Hoor Shaik	11/30/2023 21:14	Juyoung Kim	2453425
	11/29/2023	11/30/2023 13:00	Hoor Shaik	11/30/2023 21:32	Juyoung Kim	2453426
SM 2320 B-2011	11/29/2023			12/02/2023 03:20	Dale L. Simmons	2453417
	11/29/2023			12/02/2023 03:29	Dale L. Simmons	2453419
SM 2340 B-2011	11/29/2023			12/12/2023 01:56	McKinley C Carter	2453427
SM 2540 C-2015	11/29/2023			12/01/2023 15:02	Yijie Li	2453417, 2453419
SM 2540 D-2015	11/29/2023			12/01/2023 15:02	Yijie Li	2453417, 2453419
SM 4500-F- C-2011	11/29/2023			12/02/2023 03:20	Dale L. Simmons	2453417
	11/29/2023			12/02/2023 03:29	Dale L. Simmons	2453419
SM 5310 B-2011	11/29/2023			12/01/2023 20:13	Kenneth H Lee	2453418
	11/29/2023			12/01/2023 20:29	Kenneth H Lee	2453420