

Chemical Analysis Report

SO-DIST-2023-04-07-01

Florida DEP Laboratory
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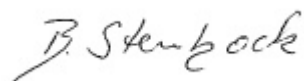
Event Description: **2023 SMP : Land O' Lakes**
Request ID: **RQ-2023-03-27-31**
Customer: **SO-DIST**
Project ID: **SMP**

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

Date Certified: 28-APR-2023 12:45



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: Bonnet Creek at SR 64

Collection Date/Time: 04/06/2023 10:00

Field ID: G4SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399281	DEP SOP: NU-094-1	Color (true)	170		PCU	P428219	
	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P428211	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P428575	
		Sulfate	18		mg SO4/L	P428578	
	SM 2320 B-2011	Total Alkalinity	41		mg CaCO3/L	P428357	
	SM 2540 C-2015	TDS	154		mg/L	P428708	
	SM 2540 D-2015	TSS	4	I	mg/L	P428570	
2399282	SM 4500-F- C-2011	Fluoride	0.097	I	mg F/L	P428729	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P428642	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P428676	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P428684	
	EPA 365.1 Rev. 2.0	Total-P	1.1		mg P/L	P428302	
2399292	EPA 8321B	SM 5310 B-2011	Organic Carbon	17	mg C/L	P428348	
		2,4-D	0.0020	U	ug/L	P428189	
		Acesulfame K	0.10	U	ug/L	P428127	
		2,4,5-T	0.0040	U	ug/L	P428189	
		AMPA	0.43		ug/L	P428127	
		Acetaminophen	0.0080	U	ug/L	P428189	
		Acetamiprid	0.0020	U	ug/L	P428189	
		Endothall	0.25	U	ug/L	P428127	
		Glufosinate	0.10	U	ug/L	P428127	
		Glyphosate	0.10	U	ug/L	P428127	
		Afidopyropen	0.0020	U	ug/L	P428189	
		Bentazon	8.0E-04	U	ug/L	P428189	
		Sucralose	0.054		ug/L	P428127	
		Benzovindiflupyr	0.0020	U	ug/L	P428189	
		Carbamazepine	8.0E-04	U	ug/L	P428189	
		Clothianidin	0.011		ug/L	P428189	
		Dinotefuran	0.0020	U	ug/L	P428189	
		Diuron	0.0020	U	ug/L	P428189	
		Fenuron	0.032	U	ug/L	P428189	
		Fluridone	8.0E-04	U	ug/L	P428189	
		Imazapyr	0.0040	U	ug/L	P428189	
		Hydrocodone	0.0020	U	ug/L	P428189	
		Ibuprofen	0.080	U	ug/L	P428189	
		Imidacloprid	0.029		ug/L	P428189	
		Linuron	0.0040	U	ug/L	P428189	
		Mandestrobin	0.0020	U	ug/L	P428189	
		MCP	0.0020	U	ug/L	P428189	
		Naproxen	0.0080	U	ug/L	P428189	
		Primidone	0.0040	U	ug/L	P428189	
		Pyraclostrobin	0.0020	U	ug/L	P428189	
		Silvex	0.0040	U	ug/L	P428189	
		Thiamethoxam	0.066		ug/L	P428189	

Field ID: G4SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399292	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P428189	
		Triclopyr	0.0040	U	ug/L	P428189	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Red Water Lake at Mid

Collection Date/Time: 04/06/2023 12:10

Field ID: G4SD0224

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399277	DEP SOP: NU-094-1	Color (true)	13		PCU	P428219	
	EPA 180.1 Rev. 2.0	Turbidity	3.0	A	NTU	P428211	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P428575	
		Sulfate	31		mg SO4/L	P428578	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P428357	
	SM 2540 C-2015	TDS	128		mg/L	P428708	
	SM 2540 D-2015	TSS	4	I	mg/L	P428570	
	SM 4500-F- C-2011	Fluoride	0.049	I	mg F/L	P428729	
2399278	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P428641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P428676	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428684	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P428302	
	SM 5310 B-2011	Organic Carbon	8.7		mg C/L	P428348	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake June in Winter

Collection Date/Time: 04/06/2023 12:55

Field ID: G4SD0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399273	DEP SOP: NU-094-1	Color (true)	7.1		PCU	P428219	
	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P428210	
	EPA 300.0 Rev. 2.1	Chloride	20	A	mg Cl/L	P428575	
		Sulfate	28	A	mg SO4/L	P428578	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P428357	
	SM 2540 C-2015	TDS	122		mg/L	P428708	
	SM 2540 D-2015	TSS	3	I	mg/L	P428570	
	SM 4500-F- C-2011	Fluoride	0.057	I	mg F/L	P428729	
2399275	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P428641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P428679	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428684	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P428302	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P428348	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKEPLACIDOUTLETATSR70W

Collection Date/Time: 04/06/2023 14:05

Field ID: G4SD0213

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399279	DEP SOP: NU-094-1	Color (true)	360		PCU	P428219	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P428211	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P428575	
		Sulfate	27		mg SO4/L	P428578	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P428357	
	SM 2540 C-2015	TDS	175		mg/L	P428708	
	SM 2540 D-2015	TSS	4	I	mg/L	P428570	
2399280	SM 4500-F- C-2011	Fluoride	0.079	I	mg F/L	P428729	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P428642	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P428676	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428684	
	EPA 365.1 Rev. 2.0	Total-P	1.7		mg P/L	P428302	
2399293	SM 5310 B-2011	Organic Carbon	33		mg C/L	P428348	
	EPA 200.7 Rev. 4.4	Calcium	11.4		mg/L	P428270	
		Chromium	1.0	U	ug/L	P428270	
		Cobalt	1.0	U	ug/L	P428270	
		Iron	250		ug/L	P428270	
		Magnesium	6.44		mg/L	P428270	
		Potassium	18.2		mg/L	P428270	
		Sodium	7.6		mg/L	P428270	
		Strontium	502		ug/L	P428270	
		Tin	3.0	U	ug/L	P428270	
		Titanium	4.8		ug/L	P428270	
		Vanadium	2.0	U	ug/L	P428270	
	EPA 200.8 Rev. 5.4	Aluminum	254		ug/L	P428270	
		Antimony	0.050	U	ug/L	P428270	
		Arsenic	0.66		ug/L	P428270	
		Barium	4.63		ug/L	P428270	
		Beryllium	0.010	I	ug/L	P428270	
		Boron	62.3		ug/L	P428270	
		Cadmium	0.020	U	ug/L	P428270	
		Copper	0.82		ug/L	P428270	
		Lead	0.21	I	ug/L	P428270	
		Manganese	7.70		ug/L	P428270	
		Molybdenum	0.39	I	ug/L	P428270	
		Nickel	0.71	I	ug/L	P428270	
		Selenium	0.27	I	ug/L	P428270	
		Silver	0.010	U	ug/L	P428270	
		Thallium	0.10	U	ug/L	P428270	
		Zinc	7.0	U	ug/L	P428270	
	SM 2340 B-2011	Hardness	55.0		mg/L	P428270	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Glenada

Collection Date/Time: 04/06/2023 10:35

Field ID: G4SD0179

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399274	DEP SOP: NU-094-1	Color (true)	47	A	PCU	P428219	
	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P428210	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P428575	
		Sulfate	16		mg SO4/L	P428578	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P428357	
	SM 2540 C-2015	TDS	116		mg/L	P428708	
	SM 2540 D-2015	TSS	10	I	mg/L	P428570	
	SM 4500-F- C-2011	Fluoride	0.075	I	mg F/L	P428729	
2399276	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P428641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P428676	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P428684	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P428302	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P428348	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P428219

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428210

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428211

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P428270

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Cobalt	1.0	U	ug/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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P428270

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
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
Zinc	7.0	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428575

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428578

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428641

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428676

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428679

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428684

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428302

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

Reference Method: EPA 8321B
Batch ID: P428127

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: P428127

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

Reference Method: EPA 8321B
Batch ID: P428189

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: P428357

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

Reference Method: SM 2540 C-2015
Batch ID: P428708

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428570

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P428729

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P428348

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: P428219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.9		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428210

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	98.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.2		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P428270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Chromium	109		P	85 - 115
Cobalt	102		P	85 - 115
Iron	106		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	106		P	85 - 115
Sodium	114		P	85 - 115
Strontium	108		P	85 - 115
Tin	105		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P428270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	101		P	85 - 115
Barium	102		P	85 - 115
Beryllium	97.2		P	85 - 115
Boron	107		P	85 - 115
Cadmium	104		P	85 - 115
Copper	98.1		P	85 - 115
Lead	97.9		P	85 - 115
Manganese	99.4		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	97.8		P	85 - 115
Silver	102		P	85 - 115
Thallium	99.8		P	85 - 115
Zinc	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428575

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428578

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428641

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428676

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428679

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428302

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

Reference Method: EPA 8321B
Batch ID: P428127

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.6		P	40 - 150
AMPA	109		P	40 - 150
Endothall	89.8		P	40 - 150
Glufosinate	105		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P428127

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	120		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	40 - 150
2,4,5-T	88.6		P	40 - 150
Acetaminophen	99.2		P	30 - 150
Acetamiprid	83.0		P	40 - 150
Afidopyropen	86.6		P	30 - 150
Bentazon	93.8		P	30 - 150
Benzovindiflupyr	79.3		P	40 - 150
Carbamazepine	81.1		P	40 - 150
Clothianidin	86.0		P	40 - 150
Dinotefuran	92.9		P	40 - 150
Diuron	77.7		P	40 - 150
Fenuron	81.5		P	40 - 150
Fluridone	84.1		P	40 - 150
Hydrocodone	96.2		P	40 - 150
Ibuprofen	68.9		P	40 - 150
Imazapyr	91.3		P	40 - 150
Imidacloprid	82.3		P	40 - 150
Linuron	76.6		P	40 - 150
Mandestrobin	81.8		P	40 - 150
MCPP	95.6		P	40 - 150
Naproxen	78.1		P	40 - 150
Primidone	97.0		P	40 - 150
Pyraclostrobin	75.2		P	40 - 150
Silvex	116		P	40 - 150
Thiamethoxam	92.0		P	40 - 150
Tolfenpyrad	46.9		P	30 - 150
Triclopyr	103		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P428357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P428708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P428570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.4		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P428729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P428348

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P428270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398938	Calcium	106	109	P/P	80 - 120
2398938	Chromium	108	110	P/P	80 - 120
2398938	Cobalt	103	104	P/P	80 - 120
2398938	Iron	107	109	P/P	80 - 120
2398938	Magnesium	110	112	P/P	80 - 120
2398938	Potassium	106	107	P/P	80 - 120
2398938	Sodium	113	116	P/P	80 - 120
2398938	Strontium	108	109	P/P	80 - 120
2398938	Tin	106	107	P/P	80 - 120
2398938	Titanium	105	106	P/P	80 - 120
2398938	Vanadium	106	107	P/P	80 - 120
2399053	Calcium	106		P	80 - 120
2399053	Chromium	109		P	80 - 120
2399053	Cobalt	103		P	80 - 120
2399053	Iron	108		P	80 - 120
2399053	Magnesium	111		P	80 - 120
2399053	Potassium	106		P	80 - 120
2399053	Sodium	112		P	80 - 120
2399053	Strontium	109		P	80 - 120
2399053	Tin	107		P	80 - 120
2399053	Titanium	104		P	80 - 120
2399053	Vanadium	108		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P428270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398938	Aluminum	101	102	P/P	80 - 120
2398938	Antimony	102	101	P/P	80 - 120
2398938	Arsenic	102	101	P/P	80 - 120
2398938	Barium	102	101	P/P	80 - 120
2398938	Beryllium	99.6	98.5	P/P	80 - 120
2398938	Boron	108	104	P/P	85 - 115
2398938	Cadmium	105	103	P/P	80 - 120
2398938	Copper	101	99.1	P/P	80 - 120
2398938	Lead	99.2	99.0	P/P	80 - 120
2398938	Manganese	101	98.1	P/P	80 - 120
2398938	Molybdenum	102	101	P/P	80 - 120
2398938	Nickel	100	99.6	P/P	80 - 120
2398938	Selenium	99.9	98.0	P/P	80 - 120
2398938	Silver	101	101	P/P	80 - 120
2398938	Thallium	102	101	P/P	80 - 120
2398938	Zinc	104	103	P/P	80 - 120
2399053	Aluminum	100		P	80 - 120
2399053	Antimony	104		P	80 - 120
2399053	Arsenic	103		P	80 - 120
2399053	Barium	106		P	80 - 120
2399053	Beryllium	96.9		P	80 - 120
2399053	Boron	104		P	85 - 115
2399053	Cadmium	106		P	80 - 120
2399053	Copper	106		P	80 - 120
2399053	Lead	99.4		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P428270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399053	Manganese	106		P	80 - 120
2399053	Molybdenum	105		P	80 - 120
2399053	Nickel	103		P	80 - 120
2399053	Selenium	103		P	80 - 120
2399053	Silver	102		P	80 - 120
2399053	Thallium	103		P	80 - 120
2399053	Zinc	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428575

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399273	Chloride	97.1		P	90 - 110
2399277	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399273	Sulfate	94.1		P	90 - 110
2399277	Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399124	Ammonia-N	95.2	94.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399301	Ammonia-N	96.4	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399212	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399206	Total-P	99.4	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P428127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398314	Acesulfame K	93.7	93.8	P/P	40 - 150
2398314	AMPA	116	114	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P428127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398314	Endothall	98.3	95.1	P/P	40 - 150
2398314	Glufosinate	95.4	99.3	P/P	40 - 150
2398314	Glyphosate	113	111	P/P	40 - 150
2398314	Sucralose	101	119	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398266	2,4-D	119	123	P/P	40 - 150
2398266	2,4,5-T	108	109	P/P	40 - 150
2398266	Acetaminophen	110	106	P/P	30 - 150
2398266	Acetamiprid	92.9	93.3	P/P	40 - 150
2398266	Afidopyropen	104	95.1	P/P	30 - 150
2398266	Bentazon	97.5	103	P/P	30 - 150
2398266	Benzovindiflupyr	86.2	84.1	P/P	40 - 150
2398266	Carbamazepine	90.9	98.7	P/P	40 - 150
2398266	Clothianidin	93.2	97.8	P/P	40 - 150
2398266	Dinotefuran	106	116	P/P	40 - 150
2398266	Diuron	70.9	79.9	P/P	40 - 150
2398266	Fenuron	80.7	82.7	P/P	40 - 150
2398266	Fluridone	84.5	83.9	P/P	40 - 150
2398266	Hydrocodone	106	114	P/P	40 - 150
2398266	Ibuprofen	75.3	73.0	P/P	40 - 150
2398266	Imazapyr	108	112	P/P	40 - 150
2398266	Imidacloprid	99.4	104	P/P	40 - 150
2398266	Linuron	79.8	77.3	P/P	40 - 150
2398266	Mandestrobin	90.9	89.8	P/P	40 - 150
2398266	MCPP	108	103	P/P	40 - 150
2398266	Naproxen	116	110	P/P	40 - 150
2398266	Primidone	103	113	P/P	40 - 150
2398266	Pyraclostrobin	81.6	83.8	P/P	40 - 150
2398266	Silvex	115	124	P/P	40 - 150
2398266	Thiamethoxam	91.2	90.4	P/P	40 - 150
2398266	Tolfenpyrad	48.9	51.2	P/P	30 - 150
2398266	Triclopyr	104	99.7	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P428729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399299	Fluoride	104	104	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P428348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399086	Organic Carbon	95.8	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P428219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399274	Color (true)	0.970	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399038	Turbidity	4.31	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399277	Turbidity	6.34	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P428270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398938	Calcium	1.60	Spike	P	0 - 20
2398938	Chromium	2.20	Spike	P	0 - 20
2398938	Cobalt	0.848	Spike	P	0 - 20
2398938	Iron	1.39	Spike	P	0 - 20
2398938	Magnesium	1.58	Spike	P	0 - 20
2398938	Potassium	0.735	Spike	P	0 - 20
2398938	Sodium	1.55	Spike	P	0 - 20
2398938	Strontium	1.42	Spike	P	0 - 20
2398938	Tin	1.13	Spike	P	0 - 20
2398938	Titanium	0.597	Spike	P	0 - 20
2398938	Vanadium	0.773	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P428270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398938	Aluminum	0.537	Spike	P	0 - 20
2398938	Antimony	0.614	Spike	P	0 - 20
2398938	Arsenic	1.33	Spike	P	0 - 20
2398938	Barium	0.631	Spike	P	0 - 20
2398938	Beryllium	1.09	Spike	P	0 - 20
2398938	Boron	2.81	Spike	P	0 - 20
2398938	Cadmium	2.45	Spike	P	0 - 20
2398938	Copper	1.57	Spike	P	0 - 20
2398938	Lead	0.189	Spike	P	0 - 20
2398938	Manganese	2.11	Spike	P	0 - 20
2398938	Molybdenum	1.26	Spike	P	0 - 20
2398938	Nickel	0.495	Spike	P	0 - 20
2398938	Selenium	1.91	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P428270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398938	Silver	0.684	Spike	P	0 - 20
2398938	Thallium	0.821	Spike	P	0 - 20
2398938	Zinc	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428575

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399273	Chloride	2.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399273	Sulfate	3.04	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399124	Ammonia-N	0.348	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399301	Ammonia-N	1.56	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399331	Kjeldahl Nitrogen	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399106	Kjeldahl Nitrogen	3.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428684

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399212	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428302

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399206	Total-P	0.677	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P428127

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398314	Acesulfame K	0.0610	Spike	P	0 - 30
2398314	AMPA	1.77	Spike	P	0 - 30
2398314	Endothall	3.27	Spike	P	0 - 30
2398314	Glufosinate	4.00	Spike	P	0 - 30
2398314	Glyphosate	1.86	Spike	P	0 - 30
2398314	Sucralose	16.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P428189

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398266	2,4-D	3.06	Spike	P	0 - 30
2398266	2,4,5-T	0.103	Spike	P	0 - 30
2398266	Acetaminophen	2.86	Spike	P	0 - 30
2398266	Acetamiprid	0.389	Spike	P	0 - 30
2398266	Afidopyropen	8.59	Spike	P	0 - 30
2398266	Bentazon	4.61	Spike	P	0 - 30
2398266	Benzovindiflupyr	2.44	Spike	P	0 - 30
2398266	Carbamazepine	8.28	Spike	P	0 - 30
2398266	Clothianidin	4.82	Spike	P	0 - 30
2398266	Dinotefuran	8.83	Spike	P	0 - 30
2398266	Diuron	12.0	Spike	P	0 - 30
2398266	Fenuron	2.38	Spike	P	0 - 30
2398266	Fluridone	0.725	Spike	P	0 - 30
2398266	Hydrocodone	6.86	Spike	P	0 - 30
2398266	Ibuprofen	3.12	Spike	P	0 - 30
2398266	Imazapyr	3.99	Spike	P	0 - 30
2398266	Imidacloprid	4.38	Spike	P	0 - 30
2398266	Linuron	3.20	Spike	P	0 - 30
2398266	Mandestrobin	1.26	Spike	P	0 - 30
2398266	MCPP	4.67	Spike	P	0 - 30
2398266	Naproxen	5.99	Spike	P	0 - 30
2398266	Primidone	9.18	Spike	P	0 - 30
2398266	Pyraclostrobin	2.70	Spike	P	0 - 30
2398266	Silvex	7.06	Spike	P	0 - 30
2398266	Thiamethoxam	0.974	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P428189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398266	Tolfenpyrad	4.53	Spike	P	0 - 30
2398266	Triclopyr	4.32	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P428357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398875	Total Alkalinity	2.12	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P428708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398876	TDS	6.33	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P428729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399299	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P428348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399086	Organic Carbon	0.159	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2399292
Field Sample ID: G4SD0107

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.7	P	30 - 160
EPA 8321B	Diuron-d6	47.6	P	30 - 160
EPA 8321B	Endothall-d6	97.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.8	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	92.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A118453

Included Lab Sample IDs: 2399273, 2399274, 2399277, 2399279, 2399281

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

Reference Method: DEP SOP: NU-094-1

Run ID: A118456

Included Lab Sample IDs: 2399273, 2399274, 2399277, 2399279, 2399281

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

Reference Method: EPA 8321B

Run ID: A118472

Included Lab Sample IDs: 2399292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.3	89.0	P/P	60 - 160
Sucralose	101	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A118496

Included Lab Sample IDs: 2399292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.4	88.4	P/P	50 - 150
2,4,5-T	103	101	P/P	50 - 150
Acetaminophen	108	109	P/P	60 - 160
Acetamiprid	94.5	96.7	P/P	50 - 150
Afidopyropen	135	100	P/P	50 - 150
Bentazon	114	115	P/P	50 - 160
Benzovindiflupyr	107	101	P/P	50 - 150
Carbamazepine	115	95.5	P/P	60 - 150
Clothianidin	101	99.9	P/P	60 - 150
Dinotefuran	128	123	P/P	50 - 150
Diuron	87.9	97.3	P/P	60 - 160
Fenuron	98.2	97.7	P/P	60 - 150
Fluridone	101	111	P/P	60 - 160
Hydrocodone	134	142	P/P	60 - 150
Ibuprofen	111	98.2	P/P	50 - 160
Imazapyr	106	119	P/P	50 - 150
Imidacloprid	93.4	93.7	P/P	60 - 150
Linuron	95.5	104	P/P	60 - 150
Mandestrobin	96.9	97.3	P/P	50 - 150
MCPP	94.4	88.1	P/P	50 - 150
Naproxen	107	143	P/P	50 - 160
Primidone	112	115	P/P	60 - 150
Pyraclostrobin	103	106	P/P	60 - 150
Silvex	87.3	96.2	P/P	50 - 150
Thiamethoxam	113	118	P/P	50 - 150
Tolfenpyrad	95.1	93.2	P/P	60 - 150
Triclopyr	90.4	91.1	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A118497
Included Lab Sample IDs: 2399292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	109	P/P	60 - 160
Endothall	100		P	60 - 160
Glufosinate	94.6	84.6	P/P	60 - 160
Glyphosate	108	110	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A118516
Included Lab Sample IDs: 2399293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.5	101	P/P	90 - 110
Antimony	99.4	101	P/P	90 - 110
Arsenic	99.4	99.1	P/P	90 - 110
Barium	98.9	100	P/P	90 - 110
Beryllium	100	98.2	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Copper	95.4	97.4	P/P	90 - 110
Lead	96.0	97.0	P/P	90 - 110
Manganese	97.4	103	P/P	90 - 110
Molybdenum	99.6	99.8	P/P	90 - 110
Nickel	96.1	98.1	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Silver	99.9	99.4	P/P	90 - 110
Thallium	98.7	98.8	P/P	90 - 110
Zinc	100	99.6	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118517
Included Lab Sample IDs: 2399275, 2399276, 2399278, 2399280, 2399282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.6	P/P	90 - 110
Organic Carbon	96.4	96.0	P/P	90 - 110
Organic Carbon	96.8	96.4	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A118519
Included Lab Sample IDs: 2399273, 2399274, 2399277, 2399279, 2399281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118522
Included Lab Sample IDs: 2399280, 2399282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118527

Included Lab Sample IDs: 2399275, 2399276, 2399278

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A118541

Included Lab Sample IDs: 2399293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	100	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A118561

Included Lab Sample IDs: 2399293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Chromium	104	103	P/P	90 - 110
Cobalt	101	102	P/P	90 - 110
Iron	101	103	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Strontium	106	104	P/P	90 - 110
Tin	103	104	P/P	90 - 110
Titanium	102	101	P/P	90 - 110
Vanadium	103	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118603

Included Lab Sample IDs: 2399273, 2399274, 2399277, 2399279, 2399281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.6	98.7	P/P	90 - 110
Chloride	98.7	99.2	P/P	90 - 110
Sulfate	97.0	97.9	P/P	90 - 110
Sulfate	97.9	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118640

Included Lab Sample IDs: 2399275, 2399276, 2399278, 2399280, 2399282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.4	P/P	90 - 110
Ammonia-N	99.3	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118653

Included Lab Sample IDs: 2399275, 2399276, 2399278, 2399280, 2399282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A118673

Included Lab Sample IDs: 2399273, 2399274, 2399277, 2399279, 2399281

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118695

Included Lab Sample IDs: 2399275, 2399276, 2399278, 2399280, 2399282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.1	P/P	90 - 110
Kjeldahl Nitrogen	96.1	97.5	P/P	90 - 110
Kjeldahl Nitrogen	100	92.5	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)	98.9				0.970	
EPA 180.1 Rev. 2.0	Turbidity	98.5				4.31	
	Turbidity	99.2				6.34	
EPA 200.7 Rev. 4.4	Calcium	107	106	109	106		1.60
	Chromium	109	108	110	109		2.20
	Cobalt	102	103	104	103		0.848
	Iron	106	107	109	108		1.39
	Magnesium	109	110	112	111		1.58
	Potassium	106	106	107	106		0.735
	Sodium	114	113	116	112		1.55
	Strontium	108	108	109	109		1.42
	Tin	105	106	107	107		1.13
	Titanium	104	105	106	104		0.597
	Vanadium	106	106	107	108		0.773
EPA 200.8 Rev. 5.4	Aluminum	101	101	102	100		0.537
	Antimony	102	102	101	104		0.614
	Arsenic	101	102	101	103		1.33
	Barium	102	102	101	106		0.631
	Beryllium	97.2	99.6	98.5	96.9		1.09
	Boron	107	108	104	104		2.81
	Cadmium	104	105	103	106		2.45
	Copper	98.1	101	99.1	106		1.57
	Lead	97.9	99.2	99.0	99.4		0.189
	Manganese	99.4	101	98.1	106		2.11
	Molybdenum	101	102	101	105		1.26
	Nickel	99.2	100	99.6	103		0.495
	Selenium	97.8	99.9	98.0	103		1.91
	Silver	102	101	101	102		0.684
	Thallium	99.8	102	101	103		0.821
	Zinc	103	104	103	103		1.80
EPA 300.0 Rev. 2.1	Chloride	101	97.1	96.8		2.13	
	Sulfate	98.2	94.1	93.6		3.04	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	95.2	94.8			0.348
	Ammonia-N	97.8	96.4	98.0			1.56
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109					2.21
	Kjeldahl Nitrogen	102					3.63
EPA 353.2 Rev. 2.0	NO2NO3-N	106	101	102			0.494
EPA 365.1 Rev. 2.0	Total-P	100	99.4	100			0.677
EPA 8321B	2,4-D	107	119	123			3.06
	2,4,5-T	88.6	108	109			0.103
	Acesulfame K	89.6	93.7	93.8			0.0610
	Acetaminophen	99.2	110	106			2.86
	Acetamiprid	83.0	92.9	93.3			0.389
	Afidopyropen	86.6	104	95.1			8.59
	AMPA	109	116	114			1.77
	Bentazon	93.8	97.5	103			4.61
	Benzovindiflupyr	79.3	86.2	84.1			2.44
	Carbamazepine	81.1	90.9	98.7			8.28
	Clothianidin	86.0	93.2	97.8			4.82
	Dinotefuran	92.9	106	116			8.83
	Diuron	77.7	70.9	79.9			12.0
	Endothall	89.8	98.3	95.1			3.27
	Fenuron	81.5	80.7	82.7			2.38
	Fluridone	84.1	84.5	83.9			0.725

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glufosinate	105	95.4	99.3		4.00
	Glyphosate	120	113	111		1.86
	Hydrocodone	96.2	106	114		6.86
	Ibuprofen	68.9	75.3	73.0		3.12
	Imazapyr	91.3	108	112		3.99
	Imidacloprid	82.3	99.4	104		4.38
	Linuron	76.6	79.8	77.3		3.20
	Mandestrobin	81.8	90.9	89.8		1.26
	MCPP	95.6	108	103		4.67
	Naproxen	78.1	116	110		5.99
	Primidone	97.0	103	113		9.18
	Pyraclostrobin	75.2	81.6	83.8		2.70
	Silvex	116	115	124		7.06
	Sucralose	102	101	119		16.3
	Thiamethoxam	92.0	91.2	90.4		0.974
	Tolfenpyrad	46.9	48.9	51.2		4.53
	Triclopyr	103	104	99.7		4.32
SM 2320 B-2011	Total Alkalinity	94.9			2.12	
SM 2540 C-2015	TDS	96.8			6.33	
SM 2540 D-2015	TSS	96.4				
SM 4500-F- C-2011	Fluoride	101	104	104		0.0
SM 5310 B-2011	Organic Carbon	93.2	95.8	96.0		0.159

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2399273, 2399274, 2399277, 2399279, 2399281
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2399273, 2399274, 2399277, 2399279, 2399281
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2399293
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2399293
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2399273, 2399274, 2399277, 2399279, 2399281
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2399273, 2399274, 2399277, 2399279, 2399281
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2399275, 2399276, 2399278, 2399280, 2399282
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2399275, 2399276, 2399278, 2399280, 2399282
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2399275, 2399276, 2399278, 2399280, 2399282
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2399275, 2399276, 2399278, 2399280, 2399282
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2399292
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2399273, 2399274, 2399277, 2399279, 2399281
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2399293
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2399273, 2399274, 2399277, 2399279, 2399281
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2399273, 2399274, 2399277, 2399279, 2399281
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2399273, 2399274, 2399277, 2399279, 2399281

Reference Method Descriptions

Method	Description	Associated Samples
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2399275, 2399276, 2399278, 2399280, 2399282

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	04/07/2023			04/07/2023 16:03	Alexis Price	2399273
	04/07/2023			04/07/2023 16:04	Alexis Price	2399274, 2399277
	04/07/2023			04/07/2023 16:05	Alexis Price	2399279, 2399281
EPA 180.1 Rev. 2.0	04/07/2023			04/07/2023 13:52	Chandler E Cox	2399273, 2399274
	04/07/2023			04/07/2023 14:02	Chandler E Cox	2399277, 2399279
	04/07/2023			04/07/2023 14:03	Chandler E Cox	2399281
EPA 200.7 Rev. 4.4	04/07/2023	04/10/2023 11:45	George D Taylor	04/13/2023 17:59	McKinley C Carter	2399293
EPA 200.8 Rev. 5.4	04/07/2023	04/10/2023 11:45	George D Taylor	04/11/2023 17:58	Emily M Philpot	2399293
	04/07/2023	04/10/2023 11:45	George D Taylor	04/12/2023 20:46	Conrad Hartmann	2399293
EPA 300.0 Rev. 2.1	04/07/2023			04/14/2023 20:01	Anna M. Plaviak	2399273
	04/07/2023			04/14/2023 20:31	Anna M. Plaviak	2399277
	04/07/2023			04/15/2023 00:02	Anna M. Plaviak	2399274
	04/07/2023			04/15/2023 00:17	Anna M. Plaviak	2399279
EPA 350.1 Rev. 2.0	04/07/2023			04/15/2023 00:32	Anna M. Plaviak	2399281
	04/07/2023			04/18/2023 12:26	Khloe J Berg	2399275
	04/07/2023			04/18/2023 12:27	Khloe J Berg	2399276
	04/07/2023			04/18/2023 12:28	Khloe J Berg	2399278
	04/07/2023			04/18/2023 12:44	Khloe J Berg	2399280
EPA 351.2 Rev. 2.0	04/07/2023			04/18/2023 12:46	Khloe J Berg	2399282
	04/07/2023	04/19/2023 10:43	Dana G. Hughes	04/20/2023 14:57	Ping Hua	2399275
	04/07/2023	04/19/2023 11:19	Dana G. Hughes	04/20/2023 12:22	Ping Hua	2399276
	04/07/2023	04/19/2023 11:19	Dana G. Hughes	04/20/2023 12:24	Ping Hua	2399278
	04/07/2023	04/19/2023 11:19	Dana G. Hughes	04/20/2023 12:26	Ping Hua	2399280
EPA 353.2 Rev. 2.0	04/07/2023	04/19/2023 11:19	Dana G. Hughes	04/20/2023 12:31	Ping Hua	2399282
	04/07/2023			04/19/2023 09:37	Beverly Y. Sanders	2399275
	04/07/2023			04/19/2023 09:38	Beverly Y. Sanders	2399276
	04/07/2023			04/19/2023 09:39	Beverly Y. Sanders	2399278
	04/07/2023			04/19/2023 09:40	Beverly Y. Sanders	2399280
EPA 365.1 Rev. 2.0	04/07/2023			04/19/2023 09:41	Beverly Y. Sanders	2399282
	04/07/2023	04/11/2023 15:03	Adam P Silver	04/12/2023 10:33	James L Waggeberby	2399280
	04/07/2023	04/11/2023 15:03	Adam P Silver	04/12/2023 10:34	James L Waggeberby	2399282
	04/07/2023	04/11/2023 15:03	Adam P Silver	04/12/2023 11:46	James L Waggeberby	2399275
	04/07/2023	04/11/2023 15:03	Adam P Silver	04/12/2023 11:47	James L Waggeberby	2399276
EPA 8321B	04/07/2023	04/11/2023 15:03	Adam P Silver	04/12/2023 11:48	James L Waggeberby	2399278
	04/07/2023	04/07/2023 15:00	Touraj Touran	04/08/2023 17:16	Manjita Shrestha	2399292
	04/07/2023	04/07/2023 15:00	Touraj Touran	04/09/2023 18:01	Manjita Shrestha	2399292
SM 2320 B-2011	04/07/2023	04/10/2023 09:00	Hoor Shaik	04/11/2023 02:39	Juyoung Kim	2399292
	04/07/2023			04/12/2023 07:33	Dale L. Simmons	2399273
	04/07/2023			04/12/2023 07:46	Dale L. Simmons	2399274
	04/07/2023			04/12/2023 07:59	Dale L. Simmons	2399277

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	04/07/2023			04/12/2023 08:12	Dale L. Simmons	2399279
	04/07/2023			04/12/2023 08:26	Dale L. Simmons	2399281
SM 2340 B-2011	04/07/2023			04/13/2023 17:59	McKinley C Carter	2399293
SM 2540 C-2015	04/07/2023			04/10/2023 16:07	Yijie Li	2399273, 2399274, 2399277, 2399279, 2399281
SM 2540 D-2015	04/07/2023			04/10/2023 16:07	Yijie Li	2399273, 2399274, 2399277, 2399279, 2399281
SM 4500-F- C-2011	04/07/2023			04/19/2023 21:56	Dale L. Simmons	2399273
	04/07/2023			04/19/2023 22:01	Dale L. Simmons	2399274
	04/07/2023			04/19/2023 22:06	Dale L. Simmons	2399277
	04/07/2023			04/19/2023 22:12	Dale L. Simmons	2399279
	04/07/2023			04/19/2023 22:17	Dale L. Simmons	2399281
SM 5310 B-2011	04/07/2023			04/11/2023 17:10	Elise M. Gillis	2399275
	04/07/2023			04/11/2023 20:42	Elise M. Gillis	2399276
	04/07/2023			04/11/2023 20:57	Elise M. Gillis	2399278
	04/07/2023			04/11/2023 21:18	Elise M. Gillis	2399280
	04/07/2023			04/11/2023 22:06	Elise M. Gillis	2399282