Chemical Analysis Report

CEN-DIST-2023-07-11-01

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

Event Description: **Run 5**
Request ID: **RQ-2023-07-10-49**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 27-JUL-2023 11:56

Chris Bowen

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: FLORENCE LAKE AT CENTER **Collection Date/Time: 07/10/2023 10:27**

Field ID: G3CE0012 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2422569	DEP SOP: NU-094-1	Color (true)	220		PCU	P432308	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P432302	
	EPA 300.0 Rev. 2.1	Chloride	300		mg Cl/L	P432485	
		Sulfate	65		mg SO4/L	P432488	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P432714	
	SM 2540 C-2015	TDS	752		mg/L	P432583	
	SM 2540 D-2015	TSS	17		mg/L	P432537	
	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P432496	
2422570	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P432424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P432755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.066		mg N/L	P432532	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P432375	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P432395	
2422571	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P432315	
2422580	EPA 200.7 Rev. 4.4	Calcium	55.5		mg/L	P432361	
		Iron	850		ug/L	P432361	
		Magnesium	21.5		mg/L	P432361	
		Potassium	4.6		mg/L	P432361	
		Sodium	154		mg/L	P432361	
		Strontium	2.36E+03		ug/L	P432361	
		Tin	3.1	I	ug/L	P432361	
		Titanium	2.3	I	ug/L	P432361	
		Vanadium	2.4	I	ug/L	P432361	
		Zinc	5.0	U	ug/L	P432361	
	EPA 200.8 Rev. 5.4	Aluminum	300		ug/L	P432700	
		Antimony	0.15	I	ug/L	P432361	
		Arsenic	1.72		ug/L	P432361	
		Barium	49.2		ug/L	P432361	
		Beryllium	0.030	I	ug/L	P432361	
		Boron	68.1		ug/L	P432361	
		Cadmium	0.021	I	ug/L	P432361	
		Chromium	0.85	I	ug/L	P432361	
		Cobalt	0.153		ug/L	P432361	
		Copper	1.36		ug/L	P432361	
		Lead	1.85		ug/L	P432361	
		Manganese	11.7		ug/L	P432361	
		Molybdenum	2.31		ug/L	P432361	
		Nickel	0.54	I	ug/L	P432361	
		Selenium	0.26	I	ug/L	P432361	
		Silver	0.018	I	ug/L	P432512	
		Thallium	0.10	U	ug/L	P432361	
	SM 2340 B-2011	Hardness	227		mg/L	P432361	

Sample Location: FALK CANAL AT 50M UPSTREAM OF FISKE BLVD **Collection Date/Time: 07/10/2023 11:11**

Field ID: G3CE0016 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2422579	EPA 8321B	2,4-D	0.011		ug/L	P432236	
		Acesulfame K	0.10	U	ug/L	P432281	
		2,4,5-T	0.0040	U	ug/L	P432236	
		AMPA	0.15	I	ug/L	P432281	
		Acetaminophen	0.0080	U	ug/L	P432236	
		Acetamiprid	0.0020	U	ug/L	P432236	
		Endothall	0.25	U	ug/L	P432281	
		Glufosinate	0.10	U	ug/L	P432281	
		Glyphosate	0.80		ug/L	P432281	
		Afidopyropen	0.0020	U	ug/L	P432236	
		Bentazon	0.074		ug/L	P432236	
		Sucralose	0.049		ug/L	P432281	
		Benzovindiflupyr	0.0020	U	ug/L	P432236	
		Carbamazepine	8.0E-04	U	ug/L	P432236	
		Clothianidin	0.011		ug/L	P432236	
		Dinotefuran	0.0023	I	ug/L	P432236	
		Diuron	0.0022	I	ug/L	P432236	MS
		Fenuron	0.032	U	ug/L	P432236	
		Fluridone	8.0E-04	U	ug/L	P432236	
		Imazapyr	0.012	I	ug/L	P432236	
		Hydrocodone	0.0020	U	ug/L	P432236	
		Ibuprofen	0.080	U	ug/L	P432236	
		Imidacloprid	0.032		ug/L	P432236	
		Linuron	0.0040	U	ug/L	P432236	
		Mandestrobin	0.0020	U	ug/L	P432236	
		MCPP	0.0057	I	ug/L	P432236	
		Naproxen	0.0080	U	ug/L	P432236	
		Primidone	0.0040	U	ug/L	P432236	
		Pyraclostrobin	0.0020	U	ug/L	P432236	
		Silvex	0.0040	U	ug/L	P432236	
		Thiamethoxam	0.0027	I	ug/L	P432236	
		Tolfenpyrad	0.0020	U	ug/L	P432236	
		Triclopyr	0.0040	U	ug/L	P432236	

Ref. Method and Comment:
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: SECOND CREEK AT SR 520 **Collection Date/Time: 07/10/2023 11:55**

Field ID: G3CE0066 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2422572	DEP SOP: NU-094-1	Color (true)	75		PCU	P432308	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P432302	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P432486	
		Sulfate	20		mg SO4/L	P432489	
	SM 2320 B-2011	Total Alkalinity	165		mg CaCO3/L	P432714	
	SM 2540 C-2015	TDS	310		mg/L	P432583	
	SM 2540 D-2015	TSS	5	I	mg/L	P432537	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P432496	
2422573	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P432424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P432755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P432532	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P432397	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P432395	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P432308

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432302

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Component	Result	Code	Units
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

Component	Result	Code	Units
Silver	0.010	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Component	Result	Code	Units
Aluminum	5.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432485

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432486

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432488

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432489

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432424

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432755

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432532

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432375

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P432315

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P432236

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: EPA 8321B
Batch ID: P432281

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P432714

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

Reference Method: SM 2540 C-2015
Batch ID: P432583

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P432537

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P432496

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P432395

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: P432308

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432302

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.0		P	85 - 115
Iron	101		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	100		P	85 - 115
Strontium	97.7		P	85 - 115
Tin	98.7		P	85 - 115
Titanium	97.3		P	85 - 115
Vanadium	96.6		P	85 - 115
Zinc	97.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Barium	103		P	85 - 115
Beryllium	100		P	85 - 115
Boron	102		P	85 - 115
Cadmium	99.3		P	85 - 115
Chromium	95.0		P	85 - 115
Cobalt	98.4		P	85 - 115
Copper	98.2		P	85 - 115
Lead	92.6		P	85 - 115
Manganese	97.1		P	85 - 115
Molybdenum	99.1		P	85 - 115
Nickel	98.6		P	85 - 115
Selenium	102		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.4		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432485

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432486

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432488

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432424

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432755

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432532

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: P432375

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P432315

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

Reference Method: EPA 8321B
Batch ID: P432236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.7		P	40 - 150
2,4,5-T	87.2		P	40 - 150
Acetaminophen	65.5		P	30 - 150
Acetamiprid	73.2		P	40 - 150
Afidopyropen	54.3		P	30 - 150
Bentazon	121		P	30 - 150
Benzovindiflupyr	75.6		P	40 - 150
Carbamazepine	72.2		P	40 - 150
Clothianidin	87.9		P	40 - 150
Dinotefuran	95.0		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	85.3		P	40 - 150
Fluridone	82.7		P	40 - 150
Hydrocodone	89.1		P	40 - 150
Ibuprofen	67.0		P	40 - 150
Imazapyr	76.8		P	40 - 150
Imidacloprid	83.5		P	40 - 150
Linuron	72.1		P	40 - 150
Mandestrobin	88.2		P	40 - 150
MCPP	96.6		P	40 - 150
Naproxen	68.0		P	40 - 150
Primidone	75.6		P	40 - 150
Pyraclostrobin	68.0		P	40 - 150
Silvex	97.7		P	40 - 150
Thiamethoxam	67.7		P	40 - 150
Tolfenpyrad	42.2		P	30 - 150
Triclopyr	89.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P432281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	80.7		P	40 - 150
Endothall	71.5		P	40 - 150
Glufosinate	119		P	40 - 150
Glyphosate	125		P	40 - 150
Sucralose	89.4		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P432714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.0		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P432583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.9		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P432537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.2		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P432496

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

Reference Method: SM 5310 B-2011
Batch ID: P432395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422210	Calcium	100		P	80 - 120
2422210	Iron	101	99.7	P/P	80 - 120
2422210	Magnesium	102	101	P/P	80 - 120
2422210	Potassium	99.8	99.9	P/P	80 - 120
2422210	Sodium	100		P	80 - 120
2422210	Strontium	99.1	98.9	P/P	80 - 120
2422210	Tin	101	99.1	P/P	80 - 120
2422210	Titanium	98.0	97.5	P/P	80 - 120
2422210	Vanadium	98.8	98.7	P/P	80 - 120
2422210	Zinc	101	99.9	P/P	80 - 120
2422211	Calcium	101		P	80 - 120
2422211	Iron	98.9		P	80 - 120
2422211	Magnesium	102		P	80 - 120
2422211	Potassium	98.5		P	80 - 120
2422211	Sodium	101		P	80 - 120
2422211	Strontium	97.6		P	80 - 120
2422211	Tin	97.5		P	80 - 120
2422211	Titanium	90.5		P	80 - 120
2422211	Vanadium	97.4		P	80 - 120
2422211	Zinc	99.1		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422210	Antimony	101	111	P/P	80 - 120
2422210	Arsenic	100	110	P/P	80 - 120
2422210	Barium	103	113	P/P	80 - 120
2422210	Beryllium	97.2	105	P/P	80 - 120
2422210	Boron	103	114	P/P	80 - 120
2422210	Cadmium	100	109	P/P	80 - 120
2422210	Chromium	97.3	107	P/P	80 - 120
2422210	Cobalt	97.1	107	P/P	80 - 120
2422210	Copper	99.5	110	P/P	80 - 120
2422210	Lead	93.4	102	P/P	80 - 120
2422210	Manganese	96.1	106	P/P	80 - 120
2422210	Molybdenum	99.2	108	P/P	80 - 120
2422210	Nickel	99.2	109	P/P	80 - 120
2422210	Selenium	102	109	P/P	80 - 120
2422210	Thallium	104	113	P/P	80 - 120
2422211	Antimony	98.8		P	80 - 120
2422211	Arsenic	97.4		P	80 - 120
2422211	Barium	102		P	80 - 120
2422211	Beryllium	94.8		P	80 - 120
2422211	Boron	104		P	80 - 120
2422211	Cadmium	98.7		P	80 - 120
2422211	Chromium	94.7		P	80 - 120
2422211	Cobalt	94.9		P	80 - 120
2422211	Copper	95.8		P	80 - 120
2422211	Lead	91.8		P	80 - 120
2422211	Manganese	93.1		P	80 - 120
2422211	Molybdenum	95.7		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422211	Nickel	97.9		P	80 - 120
2422211	Selenium	96.0		P	80 - 120
2422211	Thallium	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421707	Silver	99.3	106	P/P	80 - 120
2423336	Silver	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424324	Aluminum	95.9	96.0	P/P	80 - 120
2424542	Aluminum	99.3		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422234	Chloride	98.3		P	90 - 110
2422402	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422760	Chloride	100		P	90 - 110
2422803	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422234	Sulfate	94.6		P	90 - 110
2422402	Sulfate	94.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422760	Sulfate	98.0		P	90 - 110
2422803	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422404	Ammonia-N	97.6	99.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422406	Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422406	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422405	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421629	Total-P	98.5	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P432315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422407	O-Phosphate-P	99.5	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P432236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421664	2,4-D	81.0	89.8	P/P	40 - 150
2421664	2,4,5-T	101	94.0	P/P	40 - 150
2421664	Acetaminophen	66.6	64.0	P/P	30 - 150
2421664	Acetamiprid	62.4	61.8	P/P	40 - 150
2421664	Afidopyropen	62.5	65.2	P/P	30 - 150
2421664	Benzovindiflupyr	77.1	79.8	P/P	40 - 150
2421664	Carbamazepine	50.2	49.1	P/P	40 - 150
2421664	Clothianidin	77.5	75.2	P/P	40 - 150
2421664	Dinotefuran	79.0	73.2	P/P	40 - 150
2421664	Diuron	31.8	34.4	F/F	40 - 150
2421664	Fenuron	65.9	63.8	P/P	40 - 150
2421664	Hydrocodone	65.5	62.3	P/P	40 - 150
2421664	Ibuprofen	66.1	56.4	P/P	40 - 150
2421664	Imidacloprid	110	106	P/P	40 - 150
2421664	Linuron	57.5	54.7	P/P	40 - 150
2421664	Mandestrobin	83.7	81.6	P/P	40 - 150
2421664	MCPP	99.3	103	P/P	40 - 150
2421664	Naproxen	96.0	98.4	P/P	40 - 150
2421664	Primidone	76.2	73.4	P/P	40 - 150
2421664	Pyraclostrobin	80.3	79.6	P/P	40 - 150
2421664	Silvex	88.9	83.2	P/P	40 - 150
2421664	Thiamethoxam	56.7	55.3	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P432236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421664	Tolfenpyrad	48.5	47.3	P/P	30 - 150
2421664	Triclopyr	102	91.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P432281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421699	Acesulfame K	110	113	P/P	40 - 150
2421699	AMPA	136	124	P/P	40 - 150
2421699	Endothall	74.5	71.9	P/P	40 - 150
2421699	Glufosinate	124	143	P/P	40 - 150
2421699	Glyphosate	124	123	P/P	40 - 150
2421699	Sucralose	94.8	98.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P432496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422819	Fluoride	104	104	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422043	Organic Carbon	93.3	94.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P432308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422648	Color (true)	1.61	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422648	Turbidity	0.604	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P432361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422210	Calcium	0.621	Spike	P	0 - 20
2422210	Iron	0.639	Spike	P	0 - 20
2422210	Magnesium	0.568	Spike	P	0 - 20
2422210	Potassium	0.0469	Spike	P	0 - 20
2422210	Sodium	0.00131	Spike	P	0 - 20
2422210	Strontium	0.224	Spike	P	0 - 20
2422210	Tin	1.97	Spike	P	0 - 20
2422210	Titanium	0.545	Spike	P	0 - 20
2422210	Vanadium	0.140	Spike	P	0 - 20
2422210	Zinc	0.867	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422210	Antimony	8.95	Spike	P	0 - 20
2422210	Arsenic	9.09	Spike	P	0 - 20
2422210	Barium	6.79	Spike	P	0 - 20
2422210	Beryllium	7.12	Spike	P	0 - 20
2422210	Boron	8.13	Spike	P	0 - 20
2422210	Cadmium	8.34	Spike	P	0 - 20
2422210	Chromium	9.60	Spike	P	0 - 20
2422210	Cobalt	9.47	Spike	P	0 - 20
2422210	Copper	10.4	Spike	P	0 - 20
2422210	Lead	8.87	Spike	P	0 - 20
2422210	Manganese	4.11	Spike	P	0 - 20
2422210	Molybdenum	8.84	Spike	P	0 - 20
2422210	Nickel	9.48	Spike	P	0 - 20
2422210	Selenium	6.13	Spike	P	0 - 20
2422210	Thallium	8.21	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421707	Silver	6.34	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P432700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424324	Aluminum	0.139	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422234	Chloride	1.10	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422760	Chloride	1.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422234	Sulfate	0.856	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422404	Ammonia-N	1.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422406	Kjeldahl Nitrogen	3.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422406	NO2NO3-N	0.943	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422405	Total-P	0.769	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421629	Total-P	0.608	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P432315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422407	O-Phosphate-P	0.900	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P432236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421664	2,4-D	6.91	Spike	P	0 - 30
2421664	2,4,5-T	7.63	Spike	P	0 - 30
2421664	Acetaminophen	3.97	Spike	P	0 - 30
2421664	Acetamiprid	0.884	Spike	P	0 - 30
2421664	Afidopyropen	4.14	Spike	P	0 - 30
2421664	Bentazon	10.5	Spike	P	0 - 30
2421664	Benzovindiflupyr	3.42	Spike	P	0 - 30
2421664	Carbamazepine	1.74	Spike	P	0 - 30
2421664	Clothianidin	2.80	Spike	P	0 - 30
2421664	Dinotefuran	6.98	Spike	P	0 - 30
2421664	Diuron	6.69	Spike	P	0 - 30
2421664	Fenuron	3.32	Spike	P	0 - 30
2421664	Fluridone	3.71	Spike	P	0 - 30
2421664	Hydrocodone	5.12	Spike	P	0 - 30
2421664	Ibuprofen	15.8	Spike	P	0 - 30
2421664	Imazapyr	4.16	Spike	P	0 - 30
2421664	Imidacloprid	3.58	Spike	P	0 - 30
2421664	Linuron	4.93	Spike	P	0 - 30
2421664	Mandestrobin	2.53	Spike	P	0 - 30
2421664	MCPP	3.44	Spike	P	0 - 30
2421664	Naproxen	2.47	Spike	P	0 - 30
2421664	Primidone	3.28	Spike	P	0 - 30
2421664	Pyraclostrobin	0.854	Spike	P	0 - 30
2421664	Silvex	6.71	Spike	P	0 - 30
2421664	Thiamethoxam	2.02	Spike	P	0 - 30
2421664	Tolfenpyrad	2.54	Spike	P	0 - 30
2421664	Triclopyr	10.5	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P432281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421699	Acesulfame K	3.03	Spike	P	0 - 30
2421699	AMPA	9.17	Spike	P	0 - 30
2421699	Endothall	3.45	Spike	P	0 - 30
2421699	Glufosinate	13.7	Spike	P	0 - 30
2421699	Glyphosate	0.793	Spike	P	0 - 30
2421699	Sucralose	3.42	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P432714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422819	Total Alkalinity	0.0853	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P432583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422403	TDS	4.26	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P432537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422403	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P432496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422819	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P432395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422043	Organic Carbon	0.787	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2422579
Field Sample ID: G3CE0016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	63.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.1	P	30 - 160
EPA 8321B	Diuron-d6	56.4	P	30 - 160
EPA 8321B	Endothall-d6	86.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.9	P	30 - 160
EPA 8321B	Primidone-d5	79.9	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A120291
Included Lab Sample IDs: 2422569, 2422572

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

Reference Method: DEP SOP: NU-094-1
Run ID: A120294
Included Lab Sample IDs: 2422569, 2422572

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110
Color (true)	99.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A120297
Included Lab Sample IDs: 2422571

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A120300
Included Lab Sample IDs: 2422569, 2422572

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	103	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	98.7	101	P/P	90 - 110
Sulfate	99.0	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A120301
Included Lab Sample IDs: 2422579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	100	P/P	60 - 160
Endothall	74.6	78.7	P/P	60 - 160
Glufosinate	118	112	P/P	60 - 160
Glyphosate	127	131	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A120302
Included Lab Sample IDs: 2422579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	126	138	P/P	60 - 160
Sucralose	90.7	101	P/P	60 - 160

Reference Method: SM 5310 B-2011
Run ID: A120338
Included Lab Sample IDs: 2422570, 2422573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A120349
Included Lab Sample IDs: 2422570, 2422573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A120358
Included Lab Sample IDs: 2422580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.2	99.0	P/P	90 - 110
Iron	96.8	99.3	P/P	90 - 110
Magnesium	96.0	98.4	P/P	90 - 110
Potassium	96.2	98.6	P/P	90 - 110
Sodium	96.2	100	P/P	90 - 110
Strontium	100	101	P/P	90 - 110
Tin	97.8	97.3	P/P	90 - 110
Titanium	97.9	97.7	P/P	90 - 110
Vanadium	97.3	96.8	P/P	90 - 110
Zinc	99.6	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120363
Included Lab Sample IDs: 2422580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	101	P/P	90 - 110
Arsenic	99.8	97.6	P/P	90 - 110
Barium	99.9	101	P/P	90 - 110
Beryllium	98.0	97.4	P/P	90 - 110
Boron	98.1	99.9	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	97.3	98.2	P/P	90 - 110
Cobalt	96.6	94.7	P/P	90 - 110
Copper	97.0	95.1	P/P	90 - 110
Lead	91.7	91.9	P/P	90 - 110
Manganese	97.6	98.6	P/P	90 - 110
Molybdenum	98.9	98.1	P/P	90 - 110
Nickel	97.0	95.2	P/P	90 - 110
Selenium	99.7	101	P/P	90 - 110
Thallium	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A120381
Included Lab Sample IDs: 2422570, 2422573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	101	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500-F- C-2011
Run ID: A120384
Included Lab Sample IDs: 2422569, 2422572

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A120406
Included Lab Sample IDs: 2422570, 2422573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120441
Included Lab Sample IDs: 2422580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	97.8	99.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A120445
Included Lab Sample IDs: 2422579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.2	96.3	P/P	50 - 150
2,4,5-T	92.7	92.3	P/P	50 - 150
Acetaminophen	91.5	87.0	P/P	60 - 160
Acetamiprid	111	105	P/P	50 - 150
Afidopyropen	103	130	P/P	50 - 150
Bentazon	130	121	P/P	50 - 160
Benzovindiflupyr	115	108	P/P	50 - 150
Carbamazepine	105	115	P/P	60 - 150
Clothianidin	119	111	P/P	60 - 150
Dinotefuran	122	121	P/P	50 - 150
Diuron	128	132	P/P	60 - 160
Fenuron	111	110	P/P	60 - 150
Fluridone	112	118	P/P	60 - 160
Hydrocodone	122	116	P/P	60 - 150
Ibuprofen	84.2	113	P/P	50 - 160
Imazapyr	93.3	96.8	P/P	50 - 150
Imidacloprid	104	105	P/P	60 - 150
Linuron	107	107	P/P	60 - 150
Mandestrobin	107	111	P/P	50 - 150
MCPP	102	101	P/P	50 - 150
Naproxen	106	129	P/P	50 - 160
Primidone	104	100	P/P	60 - 150
Pyraclostrobin	118	117	P/P	60 - 150
Silvex	98.4	103	P/P	50 - 150
Thiamethoxam	102	94.7	P/P	50 - 150
Tolfenpyrad	95.7	108	P/P	60 - 150
Triclopyr	97.8	112	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A120497
Included Lab Sample IDs: 2422569, 2422572

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	95.1	P/P	90 - 110
Total Alkalinity	95.1	93.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A120540
Included Lab Sample IDs: 2422580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.4	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A120578
Included Lab Sample IDs: 2422570, 2422573

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	100					1.61	
EPA 180.1 Rev. 2.0	Turbidity	100					0.604	
EPA 200.7 Rev. 4.4	Calcium	99.0	100	101				0.621
	Iron	101	101	99.7	98.9			0.639
	Magnesium	101	102	101	102			0.568
	Potassium	101	99.8	99.9	98.5			0.0469
	Sodium	100	100	101				0.0013
	Strontium	97.7	99.1	98.9	97.6			0.224
	Tin	98.7	101	99.1	97.5			1.97
	Titanium	97.3	98.0	97.5	90.5			0.545
	Vanadium	96.6	98.8	98.7	97.4			0.140
	Zinc	97.6	101	99.9	99.1			0.867
EPA 200.8 Rev. 5.4	Aluminum	98.4	95.9	96.0	99.3			0.139
	Antimony	101	101	111	98.8			8.95
	Arsenic	100	100	110	97.4			9.09
	Barium	103	103	113	102			6.79
	Beryllium	100	97.2	105	94.8			7.12
	Boron	102	103	114	104			8.13
	Cadmium	99.3	100	109	98.7			8.34
	Chromium	95.0	97.3	107	94.7			9.60
	Cobalt	98.4	97.1	107	94.9			9.47
	Copper	98.2	99.5	110	95.8			10.4
	Lead	92.6	93.4	102	91.8			8.87
	Manganese	97.1	96.1	106	93.1			4.11
	Molybdenum	99.1	99.2	108	95.7			8.84
	Nickel	98.6	99.2	109	97.9			9.48
	Selenium	102	102	109	96.0			6.13
	Silver	98.3	99.3	106	103			6.34
	Thallium	100	104	113	101			8.21
EPA 300.0 Rev. 2.1	Chloride	99.4	98.3	98.2			1.10	
	Chloride	102	100	102			1.23	
	Sulfate	96.8	94.6	94.0			0.856	
	Sulfate	97.6	98.0	98.1				
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	97.6	99.4				1.61
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	100	106				3.14
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106	106				0.943
EPA 365.1 Rev. 2.0	Total-P	104	103	104				0.769
	Total-P	95.8	98.5	97.8				0.608
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.5	100				0.900
EPA 8321B	2,4-D	92.7	81.0	89.8				6.91
	2,4,5-T	87.2	101	94.0				7.63
	Acesulfame K	105	110	113				3.03
	Acetaminophen	65.5	66.6	64.0				3.97
	Acetamiprid	73.2	62.4	61.8				0.884
	Afidopyropen	54.3	62.5	65.2				4.14
	AMPA	80.7	136	124				9.17
	Bentazon	121						10.5
	Benzovindiflupyr	75.6	77.1	79.8				3.42
	Carbamazepine	72.2	50.2	49.1				1.74
	Clothianidin	87.9	77.5	75.2				2.80
	Dinotefuran	95.0	79.0	73.2				6.98
	Diuron	81.8	31.8	34.4				6.69
	Endothall	71.5	74.5	71.9				3.45
	Fenuron	85.3	65.9	63.8				3.32

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Fluridone	82.7					3.71
	Glufosinate	119	124	143			13.7
	Glyphosate	125	124	123			0.793
	Hydrocodone	89.1	65.5	62.3			5.12
	Ibuprofen	67.0	66.1	56.4			15.8
	Imazapyr	76.8					4.16
	Imidacloprid	83.5	110	106			3.58
	Linuron	72.1	57.5	54.7			4.93
	Mandestrobin	88.2	83.7	81.6			2.53
	MCPP	96.6	99.3	103			3.44
	Naproxen	68.0	96.0	98.4			2.47
	Primidone	75.6	76.2	73.4			3.28
	Pyraclostrobin	68.0	80.3	79.6			0.854
	Silvex	97.7	88.9	83.2			6.71
	Sucralose	89.4	94.8	98.2			3.42
	Thiamethoxam	67.7	56.7	55.3			2.02
	Tolfenpyrad	42.2	48.5	47.3			2.54
	Triclopyr	89.6	102	91.5			10.5
SM 2320 B-2011	Total Alkalinity	97.0				0.0853	
SM 2540 C-2015	TDS	96.9				4.26	
SM 2540 D-2015	TSS	93.2				0.0	
SM 4500-F- C-2011	Fluoride	102	104	104			0.0
SM 5310 B-2011	Organic Carbon	95.4	93.3	94.4			0.787

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2422569, 2422572
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2422569, 2422572
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2422580
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2422580
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2422569, 2422572
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2422569, 2422572
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2422570, 2422573
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2422570, 2422573
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2422570, 2422573
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2422570, 2422573
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2422571
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2422579
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2422569, 2422572
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2422580
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2422569, 2422572
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2422569, 2422572
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2422569, 2422572
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2422570, 2422573

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	07/11/2023			07/11/2023 14:40	Chandler E Cox	2422572
	07/11/2023			07/11/2023 15:22	Chandler E Cox	2422569
EPA 180.1 Rev. 2.0	07/11/2023			07/11/2023 13:40	Alexis Price	2422569
	07/11/2023			07/11/2023 13:41	Alexis Price	2422572
EPA 200.7 Rev. 4.4	07/11/2023	07/12/2023 13:10	George D Taylor	07/13/2023 19:27	McKinley C Carter	2422580
EPA 200.8 Rev. 5.4	07/11/2023	07/12/2023 13:10	George D Taylor	07/13/2023 15:35	Emily M Philpot	2422580
	07/11/2023	07/14/2023 12:55	George D Taylor	07/17/2023 15:00	Conrad Hartmann	2422580
	07/11/2023	07/19/2023 13:40	George D Taylor	07/20/2023 18:08	Conrad Hartmann	2422580
EPA 300.0 Rev. 2.1	07/11/2023			07/13/2023 17:55	James L Waggerby	2422569
	07/11/2023			07/13/2023 20:25	James L Waggerby	2422572
EPA 350.1 Rev. 2.0	07/11/2023			07/13/2023 13:05	Khloe J Berg	2422570
	07/11/2023			07/13/2023 13:06	Khloe J Berg	2422573
EPA 351.2 Rev. 2.0	07/11/2023	07/20/2023 10:58	Dana G. Hughes	07/24/2023 11:24	Samantha L Bates	2422570
	07/11/2023	07/20/2023 10:58	Dana G. Hughes	07/24/2023 11:26	Samantha L Bates	2422573
EPA 353.2 Rev. 2.0	07/11/2023			07/13/2023 14:23	Judith K. Clark	2422570
	07/11/2023			07/13/2023 14:25	Judith K. Clark	2422573
EPA 365.1 Rev. 2.0	07/11/2023	07/13/2023 16:15	Adam P Silver	07/13/2023 19:32	James L Waggerby	2422570
	07/11/2023	07/13/2023 16:15	Adam P Silver	07/13/2023 19:57	James L Waggerby	2422573
EPA 365.1 Rev. 2.0 dissolved	07/11/2023			07/11/2023 15:40	Elise M. Gillis	2422571
EPA 8321B	07/11/2023	07/11/2023 12:30	Hana Lee	07/11/2023 16:14	Hana Lee	2422579
	07/11/2023	07/11/2023 12:30	Hana Lee	07/12/2023 00:58	Hana Lee	2422579
	07/11/2023	07/12/2023 08:30	Hoor Shaik	07/17/2023 23:11	Juyoung Kim	2422579
SM 2320 B-2011	07/11/2023			07/18/2023 15:38	Dale L. Simmons	2422572
	07/11/2023			07/18/2023 18:13	Dale L. Simmons	2422569
SM 2340 B-2011	07/11/2023			07/13/2023 19:27	McKinley C Carter	2422580
SM 2540 C-2015	07/11/2023			07/13/2023 14:00	Dana G. Hughes	2422569, 2422572
SM 2540 D-2015	07/11/2023			07/13/2023 14:00	Dana G. Hughes	2422569, 2422572
SM 4500-F- C-2011	07/11/2023			07/14/2023 07:18	Dale L. Simmons	2422572
	07/11/2023			07/14/2023 10:48	Dale L. Simmons	2422569
SM 5310 B-2011	07/11/2023			07/13/2023 06:39	Elise M. Gillis	2422570
	07/11/2023			07/13/2023 06:58	Elise M. Gillis	2422573