

Chemical Analysis Report

SW-DIST-2022-11-03-02

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

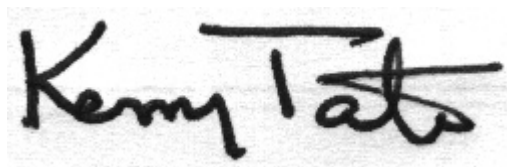
Event Description: **2022 Run 6**
Request ID: **RQ-2022-10-31-32**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 22-NOV-2022 11:31

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: McMullen Creek @ 28th Ave

Collection Date/Time: 11/02/2022 11:20

Field ID: G1SW0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2367232	EPA 200.7 Rev. 4.4	Calcium	92.8		mg/L	P421909	
		Iron	320		ug/L	P421909	
		Magnesium	34.1		mg/L	P421909	
		Potassium	2.2		mg/L	P421909	
		Sodium	20.8		mg/L	P421909	
		Strontium	1.86E+03		ug/L	P421909	
		Tin	3.0	U	ug/L	P421909	
		Titanium	2.1	I	ug/L	P421909	
		Vanadium	2.0	U	ug/L	P421909	
		Zinc	5.0	U	ug/L	P421909	
	EPA 200.8 Rev. 5.4	Aluminum	70		ug/L	P421909	
		Antimony	0.16	I	ug/L	P421909	
		Arsenic	6.31		ug/L	P421909	
		Barium	17.3		ug/L	P421909	
		Beryllium	0.013	I	ug/L	P421909	
		Boron	50.5		ug/L	P421909	
		Cadmium	0.020	U	ug/L	P421909	
		Chromium	0.45	I	ug/L	P421909	
		Cobalt	0.074	I	ug/L	P421909	
		Copper	1.74		ug/L	P421909	
		Lead	0.20	U	ug/L	P421909	
		Manganese	41.9		ug/L	P421909	
		Molybdenum	4.19		ug/L	P421909	
		Nickel	0.82	I	ug/L	P421909	
		Selenium	0.20	U	ug/L	P421909	
		Silver	0.010	U	ug/L	P421909	
		Thallium	0.10	U	ug/L	P421909	

Sample Location: Wildcat Creek N Branch@Scramble Dr

Collection Date/Time: 11/02/2022 12:15

Field ID: G2SW0112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2367229	EPA 8321B	2,4-D	0.0020	U	ug/L	P421979	
		Acesulfame K	0.10	U	ug/L	P421965	
		2,4,5-T	0.0040	U	ug/L	P421979	
		AMPA	1.9		ug/L	P421965	
		Acetaminophen	0.0080	U	ug/L	P421979	
		Acetamiprid	0.0020	U	ug/L	P421979	
		Endothall	0.25	U	ug/L	P421965	MS
		Glufosinate	0.10	U	ug/L	P421965	
		Glyphosate	0.95		ug/L	P421965	
		Afidopyropen	0.0020	U	ug/L	P421979	
		Bentazon	0.043		ug/L	P421979	
		Sucralose	1.2		ug/L	P421965	
		Benzovindiflupyr	0.0020	U	ug/L	P421979	
		Carbamazepine	0.0016	I	ug/L	P421979	
		Clothianidin	0.021		ug/L	P421979	
		Dinotefuran	0.0020	U	ug/L	P421979	MS
		Diuron	0.014		ug/L	P421979	
		Fenuron	0.032	U	ug/L	P421979	
		Fluridone	8.0E-04	U	ug/L	P421979	
		Imazapyr	0.32		ug/L	P421979	
		Hydrocodone	0.0020	U	ug/L	P421979	
		Ibuprofen	0.20	U	ug/L	P421979	
		Imidacloprid	0.028		ug/L	P421979	MS
		Linuron	0.0040	U	ug/L	P421979	
		Mandestrobin	0.0020	U	ug/L	P421979	
		MCPP	0.0040	U	ug/L	P421979	
		Naproxen	0.0080	U	ug/L	P421979	
		Primidone	0.0066	I	ug/L	P421979	
		Pyraclostrobin	0.0020	U	ug/L	P421979	
		Silvex	0.0040	U	ug/L	P421979	
		Thiamethoxam	0.015		ug/L	P421979	MS
		Tolfenpyrad	0.0020	U	ug/L	P421979	
		Triclopyr	0.0040	U	ug/L	P421979	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Wildcat Creek S Branch@Stephens Rd

Collection Date/Time: 11/02/2022 12:50

Field ID: G2SW0102

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2367230	EPA 8321B	2,4-D	0.0020	U	ug/L	P421979	
		Acesulfame K	0.10	U	ug/L	P421965	
		2,4,5-T	0.0040	U	ug/L	P421979	
		AMPA	10	U	ug/L	P421965	
		Acetaminophen	0.0080	U	ug/L	P421979	
		Acetamiprid	0.0020	U	ug/L	P421979	
		Endothall	0.25	U	ug/L	P421965	MS
		Glufosinate	10	U	ug/L	P421965	
		Glyphosate	10	U	ug/L	P421965	
		Afidopyropen	0.0020	U	ug/L	P421979	
		Bentazon	0.0020	I	ug/L	P421979	
		Sucralose	0.15		ug/L	P421965	
		Benzovindiflupyr	0.0020	U	ug/L	P421979	
		Carbamazepine	8.0E-04	U	ug/L	P421979	
		Clothianidin	0.0037	I	ug/L	P421979	
		Dinotefuran	0.0020	U	ug/L	P421979	MS
		Diuron	0.0097		ug/L	P421979	
		Fenuron	0.032	U	ug/L	P421979	
		Fluridone	9.0E-04	I	ug/L	P421979	
		Imazapyr	1.5		ug/L	P421979	
		Hydrocodone	0.0020	U	ug/L	P421979	
		Ibuprofen	0.20	U	ug/L	P421979	
		Imidacloprid	0.0067	I	ug/L	P421979	MS
		Linuron	0.0040	U	ug/L	P421979	
		Mandestrobin	0.0020	U	ug/L	P421979	
		MCPP	0.0040	U	ug/L	P421979	
		Naproxen	0.0080	U	ug/L	P421979	
		Primidone	0.0040	U	ug/L	P421979	
		Pyraclostrobin	0.0020	U	ug/L	P421979	
		Silvex	0.0040	U	ug/L	P421979	
		Thiamethoxam	0.0020	U	ug/L	P421979	MS
		Tolfenpyrad	0.0020	U	ug/L	P421979	
		Triclopyr	0.0040	U	ug/L	P421979	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: McMullen Creek @ Marina

Collection Date/Time: 11/02/2022 11:40

Field ID: G1SW0120

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2367213	DEP SOP: NU-094-1	Color (true)	24		PCU	P421921	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P421854	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P422462	
		Sulfate	2.1E+03		mg SO4/L	P422466	
	SM 2320 B-2011	Total Alkalinity	130		mg CaCO3/L	P422118	
	SM 2540 C-2015	TDS	2.54E+04		mg/L	P422532	
	SM 2540 D-2015	TSS	7	IA	mg/L	P422510	
2367214	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P422122	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P422137	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P421992	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P422471	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P422110	
2367215	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P422604	
2367231	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P421863	
2367231	EPA 200.7 Rev. 4.4	Calcium	330		mg/L	P421997	
		Iron	170	I	ug/L	P421997	
		Magnesium	1.05E+03		mg/L	P421997	
		Potassium	340		mg/L	P421997	
		Sodium	8.97E+03		mg/L	P421997	
		Strontium	6.20E+03		ug/L	P421997	
		Tin	12	U	ug/L	P421997	
	EPA 200.8 Rev. 5.4	Titanium	7.3	I	ug/L	P421997	
		Vanadium	8.0	U	ug/L	P421997	
		Zinc	22	I	ug/L	P421997	
		Aluminum	200	I	ug/L	P421997	
		Antimony	0.050	U	ug/L	P421997	
		Arsenic	0.86		ug/L	P421997	
		Barium	4.77		ug/L	P421997	
		Beryllium	0.010	U	ug/L	P421997	
		Boron	3.16E+03		ug/L	P421997	
		Cadmium	0.020	U	ug/L	P421997	
		Chromium	0.40	U	ug/L	P421997	
		Cobalt	0.020	U	ug/L	P421997	
		Copper	0.96		ug/L	P421997	
		Lead	0.20	U	ug/L	P421997	
		Manganese	8.66		ug/L	P421997	
		Molybdenum	2.31		ug/L	P421997	
		Nickel	0.50	U	ug/L	P421997	
		Selenium	0.20	U	ug/L	P421997	
		Silver	0.010	U	ug/L	P421997	
		Thallium	0.10	U	ug/L	P421997	

Field ID: G1SW0120

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, sodium and strontium 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: P421921

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421854

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421909

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 200.7 Rev. 4.4
Batch ID: P421997

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: P421909

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421909

Component	Result	Code	Units
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421997

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422462

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422466

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422137

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421992

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421992

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422110

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421863

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

Reference Method: EPA 8321B
Batch ID: P421965

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

Reference Method: EPA 8321B
Batch ID: P421979

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	0.20	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P421979

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	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: P422118

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

Reference Method: SM 2540 C-2015
Batch ID: P422532

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422510

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422122

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P422604

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: P421921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421854

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: P421909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	106		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	104		P	85 - 115
Sodium	106		P	85 - 115
Strontium	108		P	85 - 115
Tin	99.9		P	85 - 115
Titanium	99.8		P	85 - 115
Vanadium	99.4		P	85 - 115
Zinc	95.9		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	103		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	102		P	85 - 115
Sodium	104		P	85 - 115
Strontium	100		P	85 - 115
Tin	100		P	85 - 115
Titanium	99.7		P	85 - 115
Vanadium	99.9		P	85 - 115
Zinc	97.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.5		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	102		P	85 - 115
Barium	103		P	85 - 115
Beryllium	96.2		P	85 - 115
Boron	104		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	98.8		P	85 - 115
Cobalt	97.4		P	85 - 115
Copper	97.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	93.8		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	98.3		P	85 - 115
Nickel	98.2		P	85 - 115
Selenium	99.4		P	85 - 115
Silver	99.4		P	85 - 115
Thallium	96.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	103		P	85 - 115
Barium	107		P	85 - 115
Beryllium	93.4		P	85 - 115
Boron	112		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	102		P	85 - 115
Copper	100		P	85 - 115
Lead	101		P	85 - 115
Manganese	103		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	101		P	85 - 115
Selenium	104		P	85 - 115
Silver	106		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422462

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422466

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422137

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421992

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421992

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422110

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421863

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

Reference Method: EPA 8321B
Batch ID: P421965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	104		P	40 - 150
Endothall	110		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	93.0		P	40 - 150
Sucralose	110		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P421979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.9		P	40 - 150
2,4,5-T	74.8		P	40 - 150
Acetaminophen	94.7		P	30 - 150
Acetamiprid	76.5		P	40 - 150
Afidopyropen	32.9		P	30 - 150
Bentazon	90.7		P	30 - 150
Benzovindiflupyr	87.9		P	40 - 150
Carbamazepine	81.4		P	40 - 150
Clothianidin	95.9		P	40 - 150
Dinotefuran	114		P	40 - 150
Diuron	79.9		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	104		P	40 - 150
Ibuprofen	87.9		P	40 - 150
Imazapyr	90.7		P	40 - 150
Imidacloprid	94.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P421979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	80.9		P	40 - 150
Mandestrobin	96.6		P	40 - 150
MCPP	92.3		P	40 - 150
Naproxen	77.4		P	40 - 150
Primidone	90.9		P	40 - 150
Pyraclostrobin	88.1		P	40 - 150
Silvex	70.8		P	40 - 150
Thiamethoxam	85.5		P	40 - 150
Tolfenpyrad	40.3		P	30 - 150
Triclopyr	85.4		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P422118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.9		P	94 - 106

Reference Method: SM 2540 C-2015

Batch ID: P422532

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.7		P	90 - 110

Reference Method: SM 2540 D-2015

Batch ID: P422510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.6		P	85 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P422122

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

Reference Method: SM 5310 B-2011

Batch ID: P422604

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P421909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367365	Calcium	103		P	80 - 120
2367365	Iron	107	106	P/P	80 - 120
2367365	Magnesium	102		P	80 - 120
2367365	Potassium	105	103	P/P	80 - 120
2367365	Sodium	107	104	P/P	80 - 120
2367365	Strontium	108	106	P/P	80 - 120
2367365	Tin	102	99.7	P/P	80 - 120
2367365	Titanium	104	101	P/P	80 - 120
2367365	Vanadium	104	101	P/P	80 - 120
2367365	Zinc	98.8	96.3	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P421997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366279	Iron	108	103	P/P	70 - 130
2366279	Tin	102	97.2	P/P	70 - 130
2366279	Titanium	101	100	P/P	70 - 130
2366279	Vanadium	107	107	P/P	70 - 130
2366279	Zinc	105	104	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P421909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367365	Aluminum	103	102	P/P	80 - 120
2367365	Antimony	103	104	P/P	80 - 120
2367365	Arsenic	101	101	P/P	80 - 120
2367365	Barium	103	103	P/P	80 - 120
2367365	Beryllium	95.2	96.9	P/P	80 - 120
2367365	Boron	108	109	P/P	80 - 120
2367365	Cadmium	100	101	P/P	80 - 120
2367365	Chromium	99.1	99.5	P/P	80 - 120
2367365	Cobalt	96.5	96.6	P/P	80 - 120
2367365	Copper	95.9	95.7	P/P	80 - 120
2367365	Lead	93.9	93.3	P/P	80 - 120
2367365	Manganese	102	102	P/P	80 - 120
2367365	Molybdenum	99.7	99.7	P/P	80 - 120
2367365	Nickel	96.5	96.2	P/P	80 - 120
2367365	Selenium	97.9	99.5	P/P	80 - 120
2367365	Silver	100	100	P/P	80 - 120
2367365	Thallium	98.7	99.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P421997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366279	Aluminum	98.6	97.7	P/P	70 - 130
2366279	Antimony	99.3	100	P/P	70 - 130
2366279	Arsenic	117	117	P/P	70 - 130
2366279	Barium	103	103	P/P	70 - 130
2366279	Beryllium	113	108	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366279	Boron	107	102	P/P	70 - 130
2366279	Cadmium	95.2	96.0	P/P	70 - 130
2366279	Chromium	101	103	P/P	70 - 130
2366279	Cobalt	116	118	P/P	70 - 130
2366279	Copper	114	116	P/P	70 - 130
2366279	Lead	106	107	P/P	70 - 130
2366279	Manganese	99.9	101	P/P	70 - 130
2366279	Molybdenum	116	118	P/P	70 - 130
2366279	Nickel	116	118	P/P	70 - 130
2366279	Selenium	107	106	P/P	70 - 130
2366279	Silver	94.5	94.8	P/P	70 - 130
2366279	Thallium	112	114	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367144	Chloride	102		P	90 - 110
2367195	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367144	Sulfate	103		P	90 - 110
2367195	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367107	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367109	Kjeldahl Nitrogen	105	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367107	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367106	Total-P	97.1	99.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367215	O-Phosphate-P	98.1	98.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P421965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366653	Acesulfame K	59.6	47.3	P/P	40 - 150
2366653	AMPA	85.6	82.7	P/P	40 - 150
2366653	Endothall	170	171	F/F	40 - 150
2366653	Glufosinate	78.6	86.4	P/P	40 - 150
2366653	Glyphosate	80.8	85.9	P/P	40 - 150
2366653	Sucralose	113	123	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P421979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366785	2,4-D	100	112	P/P	40 - 150
2366785	2,4,5-T	75.2	84.2	P/P	40 - 150
2366785	Acetaminophen	116	123	P/P	30 - 150
2366785	Acetamiprid	77.4	96.8	P/P	40 - 150
2366785	Afidopyrophen	35.9	44.7	P/P	30 - 150
2366785	Benzovindiflupyr	90.7	93.4	P/P	40 - 150
2366785	Carbamazepine	84.2	88.3	P/P	40 - 150
2366785	Clothianidin	119	118	P/P	40 - 150
2366785	Dinotefuran	156	153	F/F	40 - 150
2366785	Diuron	67.7	67.1	P/P	40 - 150
2366785	Fenuron	102	101	P/P	40 - 150
2366785	Fluridone	94.7	97.6	P/P	40 - 150
2366785	Hydrocodone	133	132	P/P	40 - 150
2366785	Ibuprofen	101	83.9	P/P	40 - 150
2366785	Imazapyr	102	119	P/P	40 - 150
2366785	Imidacloprid	162	163	F/F	40 - 150
2366785	Linuron	72.2	70.8	P/P	40 - 150
2366785	Mandestrobin	93.0	101	P/P	40 - 150
2366785	MCPP	93.4	95.4	P/P	40 - 150
2366785	Naproxen	88.6	94.4	P/P	40 - 150
2366785	Primidone	111	109	P/P	40 - 150
2366785	Pyraclostrobin	102	108	P/P	40 - 150
2366785	Silvex	77.5	91.0	P/P	40 - 150
2366785	Thiamethoxam	153	157	F/F	40 - 150
2366785	Tolfenpyrad	49.5	55.0	P/P	30 - 150
2366785	Triclopyr	84.0	92.5	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P422122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366262	Fluoride	96.6	96.6	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P422604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367749	Organic Carbon	89.0	90.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P421921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367195	Color (true)	4.64	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367048	Turbidity	2.13	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367365	Calcium	1.97	Spike	P	0 - 20
2367365	Iron	0.658	Spike	P	0 - 20
2367365	Magnesium	1.46	Spike	P	0 - 20
2367365	Potassium	1.70	Spike	P	0 - 20
2367365	Sodium	1.29	Spike	P	0 - 20
2367365	Strontium	1.23	Spike	P	0 - 20
2367365	Tin	2.58	Spike	P	0 - 20
2367365	Titanium	2.75	Spike	P	0 - 20
2367365	Vanadium	2.52	Spike	P	0 - 20
2367365	Zinc	2.57	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366279	Calcium	0.639	Spike	P	0 - 20
2366279	Iron	4.35	Spike	P	0 - 20
2366279	Magnesium	0.528	Spike	P	0 - 20
2366279	Potassium	0.930	Spike	P	0 - 20
2366279	Sodium	1.57	Spike	P	0 - 20
2366279	Strontium	1.73	Spike	P	0 - 20
2366279	Tin	4.39	Spike	P	0 - 20
2366279	Titanium	0.744	Spike	P	0 - 20
2366279	Vanadium	0.0501	Spike	P	0 - 20
2366279	Zinc	1.14	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P421909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367365	Aluminum	1.03	Spike	P	0 - 20
2367365	Antimony	1.02	Spike	P	0 - 20
2367365	Arsenic	0.310	Spike	P	0 - 20
2367365	Barium	0.161	Spike	P	0 - 20
2367365	Beryllium	1.70	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P421909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367365	Boron	0.642	Spike	P	0 - 20
2367365	Cadmium	0.705	Spike	P	0 - 20
2367365	Chromium	0.317	Spike	P	0 - 20
2367365	Cobalt	0.0746	Spike	P	0 - 20
2367365	Copper	0.128	Spike	P	0 - 20
2367365	Lead	0.614	Spike	P	0 - 20
2367365	Manganese	0.0296	Spike	P	0 - 20
2367365	Molybdenum	0.0139	Spike	P	0 - 20
2367365	Nickel	0.305	Spike	P	0 - 20
2367365	Selenium	1.63	Spike	P	0 - 20
2367365	Silver	0.245	Spike	P	0 - 20
2367365	Thallium	0.534	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P421997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366279	Aluminum	0.922	Spike	P	0 - 20
2366279	Antimony	0.692	Spike	P	0 - 20
2366279	Arsenic	0.668	Spike	P	0 - 20
2366279	Barium	0.161	Spike	P	0 - 20
2366279	Beryllium	4.24	Spike	P	0 - 20
2366279	Boron	0.619	Spike	P	0 - 20
2366279	Cadmium	0.870	Spike	P	0 - 20
2366279	Chromium	1.97	Spike	P	0 - 20
2366279	Cobalt	1.83	Spike	P	0 - 20
2366279	Copper	1.44	Spike	P	0 - 20
2366279	Lead	0.778	Spike	P	0 - 20
2366279	Manganese	0.543	Spike	P	0 - 20
2366279	Molybdenum	1.54	Spike	P	0 - 20
2366279	Nickel	1.31	Spike	P	0 - 20
2366279	Selenium	0.725	Spike	P	0 - 20
2366279	Silver	0.318	Spike	P	0 - 20
2366279	Thallium	1.77	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P422462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367144	Chloride	0.249	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P422466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367144	Sulfate	0.0266	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P422137

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367107	Ammonia-N	0.331	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P421992

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367109	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P422471

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367107	NO2NO3-N	0.952	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P422110

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367106	Total-P	1.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P421863

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367215	O-Phosphate-P	0.386	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P421965

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366653	Acesulfame K	22.9	Spike	P	0 - 30
2366653	AMPA	3.43	Spike	P	0 - 30
2366653	Endothall	0.857	Spike	P	0 - 30
2366653	Glufosinate	9.51	Spike	P	0 - 30
2366653	Glyphosate	6.13	Spike	P	0 - 30
2366653	Sucralose	8.80	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P421979

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366785	2,4-D	10.7	Spike	P	0 - 30
2366785	2,4,5-T	11.4	Spike	P	0 - 30
2366785	Acetaminophen	5.59	Spike	P	0 - 30
2366785	Acetamidrid	22.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P421979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366785	Afidopyropen	21.9	Spike	P	0 - 30
2366785	Bentazon	0.348	Spike	P	0 - 30
2366785	Benzovindiflupyr	2.96	Spike	P	0 - 30
2366785	Carbamazepine	3.45	Spike	P	0 - 30
2366785	Clothianidin	0.286	Spike	P	0 - 30
2366785	Dinotefuran	1.74	Spike	P	0 - 30
2366785	Diuron	0.763	Spike	P	0 - 30
2366785	Fenuron	0.282	Spike	P	0 - 30
2366785	Fluridone	2.58	Spike	P	0 - 30
2366785	Hydrocodone	0.887	Spike	P	0 - 30
2366785	Ibuprofen	18.4	Spike	P	0 - 30
2366785	Imazapyr	8.38	Spike	P	0 - 30
2366785	Imidacloprid	0.470	Spike	P	0 - 30
2366785	Linuron	1.91	Spike	P	0 - 30
2366785	Mandestrobin	7.89	Spike	P	0 - 30
2366785	MCPP	2.14	Spike	P	0 - 30
2366785	Naproxen	6.35	Spike	P	0 - 30
2366785	Primidone	1.53	Spike	P	0 - 30
2366785	Pyraclostrobin	6.00	Spike	P	0 - 30
2366785	Silvex	16.1	Spike	P	0 - 30
2366785	Thiamethoxam	2.57	Spike	P	0 - 30
2366785	Tolfenpyrad	10.4	Spike	P	0 - 30
2366785	Triclopyr	9.60	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P422118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366262	Total Alkalinity	1.13	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015

Batch ID: P422532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366364	TDS	1.02	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P422122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366262	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P422604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367749	Organic Carbon	1.35	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2367229

Field Sample ID: G2SW0112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	123	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.8	P	30 - 160
EPA 8321B	Diuron-d6	59.3	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.1	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Lab Sample ID: 2367230

Field Sample ID: G2SW0102

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.8	P	30 - 160
EPA 8321B	Diuron-d6	62.4	P	30 - 160
EPA 8321B	Endothall-d6	98.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.3	P	30 - 160
EPA 8321B	Primidone-d5	96.0	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115725

Included Lab Sample IDs: 2367213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A115727

Included Lab Sample IDs: 2367215

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

Reference Method: DEP SOP: NU-094-1

Run ID: A115749

Included Lab Sample IDs: 2367213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A115787

Included Lab Sample IDs: 2367229, 2367230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	98.7	P/P	60 - 160
AMPA	89.6	97.7	P/P	60 - 160
Endothall	104		P	60 - 160
Glufosinate	69.7	78.9	P/P	60 - 160
Glufosinate	76.2	85.8	P/P	60 - 160
Glyphosate	89.8	94.1	P/P	60 - 160
Glyphosate	95.8	91.4	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A115799

Included Lab Sample IDs: 2367232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	99.9	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Barium	99.8	99.4	P/P	90 - 110
Beryllium	98.9	97.6	P/P	90 - 110
Boron	103	106	P/P	90 - 110
Cadmium	102	101	P/P	90 - 110
Chromium	98.4	97.3	P/P	90 - 110
Cobalt	96.7	96.2	P/P	90 - 110
Copper	97.8	96.7	P/P	90 - 110
Lead	94.1	94.1	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	99.5	99.4	P/P	90 - 110
Nickel	97.7	96.9	P/P	90 - 110
Selenium	101	101	P/P	90 - 110
Silver	99.4	99.8	P/P	90 - 110
Thallium	99.4	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A115819

Included Lab Sample IDs: 2367232

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

Reference Method: SM 2320 B-2011

Run ID: A115822

Included Lab Sample IDs: 2367213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A115822

Included Lab Sample IDs: 2367213

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: A115828

Included Lab Sample IDs: 2367214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115829

Included Lab Sample IDs: 2367214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A115852

Included Lab Sample IDs: 2367231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	101	99.1	P/P	90 - 110
Arsenic	104	103	P/P	90 - 110
Barium	105	103	P/P	90 - 110
Beryllium	99.3	96.6	P/P	90 - 110
Cadmium	103	102	P/P	90 - 110
Chromium	101	98.7	P/P	90 - 110
Cobalt	102	104	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Lead	97.0	99.8	P/P	90 - 110
Manganese	102	99.7	P/P	90 - 110
Molybdenum	102	101	P/P	90 - 110
Nickel	102	105	P/P	90 - 110
Selenium	105	102	P/P	90 - 110
Silver	105	104	P/P	90 - 110
Thallium	100	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A115857

Included Lab Sample IDs: 2367229, 2367230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.7	89.2	P/P	50 - 150
2,4,5-T	116	110	P/P	50 - 150
Acetaminophen	102	102	P/P	60 - 160
Acetamiprid	94.0	95.4	P/P	50 - 150
Afidopyropen	100	117	P/P	50 - 150
Bentazon	97.3	96.2	P/P	50 - 160
Benzovindiflupyr	92.3	97.1	P/P	50 - 150
Carbamazepine	103	97.6	P/P	60 - 150
Clothianidin	89.4	94.9	P/P	60 - 150
Dinotefuran	121	122	P/P	50 - 150
Diuron	96.5	97.2	P/P	60 - 160
Fenuron	95.1	93.8	P/P	60 - 150
Fluridone	92.9	96.1	P/P	60 - 160
Hydrocodone	103	111	P/P	60 - 150
Ibuprofen	101	99.2	P/P	50 - 160
Imazapyr	108	80.7	P/P	50 - 150
Imazapyr	92.3	96.6	P/P	50 - 150
Imidacloprid	89.7	90.6	P/P	60 - 150
Linuron	79.7	80.6	P/P	60 - 150
Mandestrobin	95.8	94.5	P/P	50 - 150
MCPP	103	106	P/P	50 - 150
Naproxen	121	113	P/P	50 - 160
Primidone	94.6	93.6	P/P	60 - 150
Pyraclostrobin	102	101	P/P	60 - 150
Silvex	87.0	83.9	P/P	50 - 150
Thiamethoxam	97.8	102	P/P	50 - 150
Tolfenpyrad	87.2	85.8	P/P	60 - 150
Triclopyr	100	109	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115858

Included Lab Sample IDs: 2367214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A115881

Included Lab Sample IDs: 2367229, 2367230

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	114	P/P	60 - 160
Sucralose	113	111	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115939

Included Lab Sample IDs: 2367213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A115943

Included Lab Sample IDs: 2367231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	101	P/P	90 - 110
Iron	101	98.6	P/P	90 - 110
Magnesium	101	98.3	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	105	104	P/P	90 - 110
Strontium	101	99.5	P/P	90 - 110
Tin	101	102	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Zinc	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A115945

Included Lab Sample IDs: 2367231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.5	98.0	P/P	90 - 110
Boron	96.1	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115957

Included Lab Sample IDs: 2367214

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A115992

Included Lab Sample IDs: 2367232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Iron	105	104	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	105	104	P/P	90 - 110
Sodium	104	103	P/P	90 - 110
Strontium	108	108	P/P	90 - 110
Tin	97.9	101	P/P	90 - 110
Titanium	102	102	P/P	90 - 110
Vanadium	101	102	P/P	90 - 110
Zinc	98.6	99.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116039

Included Lab Sample IDs: 2367214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	100	P/P	90 - 110

Quality Assurance Report

Calibration Verification

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	98.6				4.64	
EPA 180.1 Rev. 2.0	Turbidity	99.2				2.13	
EPA 200.7 Rev. 4.4	Calcium	102		103			1.97
	Calcium	104					0.639
	Iron	106		107	106		0.658
	Iron	103		108	103		4.35
	Magnesium	100		102			1.46
	Magnesium	101					0.528
	Potassium	104		105	103		1.70
	Potassium	102					0.930
	Sodium	106		107	104		1.29
	Sodium	104					1.57
	Strontium	108		108	106		1.23
	Strontium	100					1.73
	Tin	99.9		102	99.7		2.58
	Tin	100		102	97.2		4.39
	Titanium	99.8		104	101		2.75
	Titanium	99.7		101	100		0.744
	Vanadium	99.4		104	101		2.52
	Vanadium	99.9		107	107		0.0501
	Zinc	95.9		98.8	96.3		2.57
	Zinc	97.5		105	104		1.14
EPA 200.8 Rev. 5.4	Aluminum	99.5		103	102		1.03
	Aluminum	102		98.6	97.7		0.922
	Antimony	102		103	104		1.02
	Antimony	104		99.3	100		0.692
	Arsenic	102		101	101		0.310
	Arsenic	103		117	117		0.668
	Barium	103		103	103		0.161
	Barium	107		103	103		0.161
	Beryllium	96.2		95.2	96.9		1.70
	Beryllium	93.4		113	108		4.24
	Boron	104		108	109		0.642
	Boron	112		107	102		0.619
	Cadmium	98.7		100	101		0.705
	Cadmium	104		95.2	96.0		0.870
	Chromium	98.8		99.1	99.5		0.317
	Chromium	102		101	103		1.97
	Cobalt	97.4		96.5	96.6		0.0746
	Cobalt	102		116	118		1.83
	Copper	97.9		95.9	95.7		0.128
	Copper	100		114	116		1.44
	Lead	93.8		93.9	93.3		0.614
	Lead	101		106	107		0.778
	Manganese	100		102	102		0.0296
	Manganese	103		99.9	101		0.543
	Molybdenum	98.3		99.7	99.7		0.0139
	Molybdenum	102		116	118		1.54
	Nickel	98.2		96.5	96.2		0.305
	Nickel	101		116	118		1.31
	Selenium	99.4		97.9	99.5		1.63
	Selenium	104		107	106		0.725
	Silver	99.4		100	100		0.245
	Silver	106		94.5	94.8		0.318

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 200.8 Rev. 5.4	Thallium	96.8	98.7	99.2			0.534
	Thallium	106	112	114			1.77
EPA 300.0 Rev. 2.1	Chloride	103	102	104		0.249	
	Sulfate	104	103	107		0.0266	
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	100	101			0.331
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	105	99.2			4.94
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	104			0.952
EPA 365.1 Rev. 2.0	Total-P	102	97.1	99.0			1.96
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.1	98.8			0.386
EPA 8321B	2,4-D	84.9	100	112			10.7
	2,4,5-T	74.8	75.2	84.2			11.4
	Acesulfame K	118	59.6	47.3			22.9
	Acetaminophen	94.7	116	123			5.59
	Acetamiprid	76.5	77.4	96.8			22.3
	Afidopyropen	32.9	35.9	44.7			21.9
	AMPA	104	85.6	82.7			3.43
	Bentazon	90.7					0.348
	Benzovindiflupyr	87.9	90.7	93.4			2.96
	Carbamazepine	81.4	84.2	88.3			3.45
	Clothianidin	95.9	119	118			0.286
	Dinotefuran	114	156	153			1.74
	Diuron	79.9	67.7	67.1			0.763
	Endothall	110	170	171			0.857
	Fenuron	107	102	101			0.282
	Fluridone	101	94.7	97.6			2.58
	Glufosinate	106	78.6	86.4			9.51
	Glyphosate	93.0	80.8	85.9			6.13
	Hydrocodone	104	133	132			0.887
	Ibuprofen	87.9	101	83.9			18.4
	Imazapyr	90.7	102	119			8.38
	Imidacloprid	94.1	162	163			0.470
	Linuron	80.9	72.2	70.8			1.91
	Mandestrobin	96.6	93.0	101			7.89
	MCPP	92.3	93.4	95.4			2.14
	Naproxen	77.4	88.6	94.4			6.35
	Primidone	90.9	111	109			1.53
	Pyraclostrobin	88.1	102	108			6.00
	Silvex	70.8	77.5	91.0			16.1
	Sucralose	110	113	123			8.80
	Thiamethoxam	85.5	153	157			2.57
	Tolfenpyrad	40.3	49.5	55.0			10.4
	Triclopyr	85.4	84.0	92.5			9.60
SM 2320 B-2011	Total Alkalinity	95.9				1.13	
SM 2540 C-2015	TDS	96.7				1.02	
SM 2540 D-2015	TSS	93.6					
SM 4500-F- C-2011	Fluoride	101	96.6	96.6			0.0
SM 5310 B-2011	Organic Carbon	98.5	89.0	90.9			1.35

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2367213
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2367213

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2367231, 2367232
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2367231, 2367232
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2367213
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2367213
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2367214
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2367214
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2367214
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2367214
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2367215
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2367229, 2367230
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2367213
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2367213
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2367213
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2367213
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2367214

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	11/03/2022			11/03/2022 15:10	Anna M. Plaviak	2367213
EPA 180.1 Rev. 2.0	11/03/2022			11/03/2022 14:02	Chandler E Cox	2367213
EPA 200.7 Rev. 4.4	11/03/2022	11/04/2022 12:40	George D Taylor	11/17/2022 17:12	Betina Topolski	2367232
	11/03/2022	11/07/2022 11:32	George D Taylor	11/16/2022 02:37	Betina Topolski	2367231
	11/03/2022	11/07/2022 11:32	George D Taylor	11/16/2022 02:46	Betina Topolski	2367231
EPA 200.8 Rev. 5.4	11/03/2022	11/04/2022 12:40	George D Taylor	11/07/2022 21:01	Megan Whitefoot	2367232
	11/03/2022	11/04/2022 12:40	George D Taylor	11/08/2022 15:09	Megan Whitefoot	2367232
	11/03/2022	11/07/2022 11:32	George D Taylor	11/09/2022 16:22	Emily M Philpot	2367231
	11/03/2022	11/07/2022 11:32	George D Taylor	11/09/2022 17:58	Emily M Philpot	2367231
	11/03/2022	11/07/2022 11:32	George D Taylor	11/15/2022 16:09	Megan Whitefoot	2367231
EPA 300.0 Rev. 2.1	11/03/2022			11/16/2022 08:49	Anna M. Plaviak	2367213
EPA 350.1 Rev. 2.0	11/03/2022			11/08/2022 12:53	Ping Hua	2367214
EPA 351.2 Rev. 2.0	11/03/2022	11/07/2022 11:40	Simonne.V. Calhoun	11/09/2022 11:11	Alexandra J Mattheus	2367214
EPA 353.2 Rev. 2.0	11/03/2022			11/15/2022 11:53	Beverly Y. Sanders	2367214
EPA 365.1 Rev. 2.0	11/03/2022	11/09/2022 13:55	Simonne.V. Calhoun	11/10/2022 10:44	James L Waggeberby	2367214
EPA 365.1 Rev. 2.0 dissolved	11/03/2022			11/03/2022 15:43	Elise M. Gillis	2367215
EPA 8321B	11/03/2022	11/06/2022 12:00	Umesh Chiluwal	11/06/2022 18:32	Umesh Chiluwal	2367229
	11/03/2022	11/06/2022 12:00	Umesh Chiluwal	11/06/2022 18:45	Umesh Chiluwal	2367230
	11/03/2022	11/06/2022 12:00	Umesh Chiluwal	11/07/2022 01:28	Umesh Chiluwal	2367230
	11/03/2022	11/06/2022 12:00	Umesh Chiluwal	11/07/2022 18:54	Umesh Chiluwal	2367229
	11/03/2022	11/06/2022 12:00	Umesh Chiluwal	11/07/2022 19:09	Umesh Chiluwal	2367230
	11/03/2022	11/08/2022 09:00	June Rhew	11/10/2022 03:49	Juyoung Kim	2367229
	11/03/2022	11/08/2022 09:00	June Rhew	11/10/2022 04:10	Juyoung Kim	2367230
	11/03/2022	11/08/2022 09:00	June Rhew	11/10/2022 10:44	Juyoung Kim	2367230
SM 2320 B-2011	11/03/2022			11/08/2022 22:53	Dale L. Simmons	2367213
SM 2540 C-2015	11/03/2022			11/07/2022 15:45	Yijie Li	2367213
SM 2540 D-2015	11/03/2022			11/07/2022 15:45	Yijie Li	2367213
SM 4500-F- C-2011	11/03/2022			11/08/2022 20:40	Dale L. Simmons	2367213
SM 5310 B-2011	11/03/2022			11/18/2022 05:04	Khloe J Berg	2367214