

Chemical Analysis Report

NW-DIST-2022-04-19-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **HWY 98 Whaler Run**

Request ID: **RQ-2022-04-18-28**

Customer: **NW-DIST**

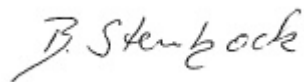
Project ID: **SMP**

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Date Certified: 09-MAY-2022 16:42



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: Joes Bayou

Collection Date/Time: 04/18/2022 11:15

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320018	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P412572	
	SM 2320 B-2011	Total Alkalinity	70		mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	3	IA	mg/L	P412994	
	SM 4500-F- C-2011	Fluoride	0.63		mg F/L	P412811	
2320019	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P412709	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P412932	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P412688	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P412669	
	SM 5310 B-2011	Organic Carbon	3.2		mg C/L	P412872	
2320028	EPA 8321B	Acesulfame K	0.10	U	ug/L	P412593	
		2,4-D	0.0047	I	ug/L	P412554	
		AMPA	10	U	ug/L	P412593	
		2,4,5-T	0.0040	U	ug/L	P412554	
		Acetaminophen	0.0080	U	ug/L	P412554	
		Endothall	0.25	U	ug/L	P412593	
		Acetamiprid	0.0020	U	ug/L	P412554	
		Glufosinate	10	U	ug/L	P412593	
		Glyphosate	10	U	ug/L	P412593	
		Afidopyropen	0.0020	U	ug/L	P412554	
		Sucralose	0.15		ug/L	P412593	
		Bentazon	8.0E-04	U	ug/L	P412554	
		Benzovindiflupyr	0.0020	U	ug/L	P412554	
		Carbamazepine	8.0E-04	U	ug/L	P412554	
		Clothianidin	0.0020	U	ug/L	P412554	
		Dinotefuran	0.0020	U	ug/L	P412554	
		Diuron	0.0020	U	ug/L	P412554	
		Fenuron	0.032	U	ug/L	P412554	
		Fluridone	8.0E-04	U	ug/L	P412554	
		Imazapyr	0.0040	U	ug/L	P412554	
		Hydrocodone	0.0020	U	ug/L	P412554	
		Ibuprofen	0.020	U	ug/L	P412554	
		Imidacloprid	0.0020	U	ug/L	P412554	MS
		Linuron	0.0040	U	ug/L	P412554	
		Mandestrobin	0.0020	U	ug/L	P412554	
		MCPP	0.0020	U	ug/L	P412554	
		Naproxen	0.0080	U	ug/L	P412554	
		Primidone	0.0040	U	ug/L	P412554	
		Pyraclostrobin	0.0020	U	ug/L	P412554	
		Silvex	0.0040	U	ug/L	P412554	RPD
		Thiamethoxam	0.0020	U	ug/L	P412554	MS
		Tolfenpyrad	0.0020	U	ug/L	P412554	
		Triclopyr	0.0040	U	ug/L	P412554	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: FB

Collection Date/Time: 04/18/2022 11:25

Field ID: FB_04182022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320020	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P412572	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P413141	
	SM 2540 D-2011	TSS	2	U	mg/L	P412992	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P413148	
2320021	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P412707	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P413093	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412610	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P412798	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P412742	
2320029	EPA 8321B	2,4-D	0.0020	U	ug/L	P412554	
		Acesulfame K	0.10	U	ug/L	P412593	
		2,4,5-T	0.0040	U	ug/L	P412554	
		AMPA	0.10	U	ug/L	P412593	
		Acetaminophen	0.0080	U	ug/L	P412554	
		Acetamiprid	0.0020	U	ug/L	P412554	
		Endothall	0.25	U	ug/L	P412593	
		Glufosinate	0.10	U	ug/L	P412593	
		Glyphosate	0.10	U	ug/L	P412593	
		Afidopyropen	0.0020	U	ug/L	P412554	
		Bentazon	8.0E-04	U	ug/L	P412554	
		Sucralose	0.010	U	ug/L	P412593	
		Benzovindiflupyr	0.0020	U	ug/L	P412554	
		Carbamazepine	8.0E-04	U	ug/L	P412554	
		Clothianidin	0.0020	U	ug/L	P412554	
		Dinotefuran	0.0020	U	ug/L	P412554	
		Diuron	0.0020	U	ug/L	P412554	
		Fenuron	0.032	U	ug/L	P412554	
		Fluridone	8.0E-04	U	ug/L	P412554	
		Imazapyr	0.0040	U	ug/L	P412554	
		Hydrocodone	0.0020	U	ug/L	P412554	
		Ibuprofen	0.020	U	ug/L	P412554	
		Imidacloprid	0.0020	U	ug/L	P412554	MS
		Linuron	0.0040	U	ug/L	P412554	
		Mandestrobin	0.0020	U	ug/L	P412554	
		MCPP	0.0020	U	ug/L	P412554	
		Naproxen	0.0080	U	ug/L	P412554	
		Primidone	0.0040	U	ug/L	P412554	
		Pyraclostrobin	0.0020	U	ug/L	P412554	
		Silvex	0.0040	U	ug/L	P412554	RPD
		Thiamethoxam	0.0020	U	ug/L	P412554	MS
		Tolfenpyrad	0.0020	U	ug/L	P412554	
		Triclopyr	0.0040	U	ug/L	P412554	

Sample Location: Yellow River above Metts Creek

Collection Date/Time: 04/18/2022 14:15

Field ID: G4NW0370

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2320030	EPA 200.7 Rev. 4.4	Calcium	3.22		mg/L	P412588	
		Iron	640		ug/L	P412588	
		Magnesium	0.85		mg/L	P412588	
		Strontium	9.9		ug/L	P412588	
		Tin	3.0	U	ug/L	P412588	
		Titanium	3.0	I	ug/L	P412588	
		Vanadium	2.0	U	ug/L	P412588	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P412588	
		Aluminum	414		ug/L	P412588	
		Antimony	0.050	U	ug/L	P412588	
		Arsenic	0.38		ug/L	P412588	
		Barium	13.2		ug/L	P412588	
		Beryllium	0.038	I	ug/L	P412588	
		Boron**	10.5		ug/L	P412588	
		Cadmium	0.020	U	ug/L	P412588	
		Chromium	0.48	I	ug/L	P412588	
		Cobalt	0.211		ug/L	P412588	
		Copper	0.40	U	ug/L	P412588	
		Lead	0.46		ug/L	P412588	
		Manganese	30.5		ug/L	P412588	
		Molybdenum	0.15	U	ug/L	P412588	
		Nickel	0.50	U	ug/L	P412588	
		Selenium	0.20	U	ug/L	P412588	
		Silver	0.010	U	ug/L	P412588	
		Thallium	0.10	U	ug/L	P412588	
	SM 2340 B-2011	Hardness	11.5		mg/L	P412588	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412572

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412588

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	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: P412588

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 350.1 Rev. 2.0
Batch ID: P412707

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413093

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

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

Reference Method: EPA 8321B
Batch ID: P412554

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.089		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	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P412554

Component	Result	Code	Units
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: P412593

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

Reference Method: SM 2320 B-2011

Batch ID: P412808

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

Reference Method: SM 2320 B-2011

Batch ID: P413141

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

Reference Method: SM 2540 D-2011

Batch ID: P412992

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P412994

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P412742

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P412872

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Strontium	105		P	85 - 115
Tin	98.0		P	85 - 115
Titanium	97.2		P	85 - 115
Vanadium	93.3		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	100		P	85 - 115
Boron	99.8		P	85 - 115
Cadmium	99.2		P	85 - 115
Chromium	99.9		P	85 - 115
Cobalt	103		P	85 - 115
Copper	99.9		P	85 - 115
Lead	99.6		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	101		P	85 - 115
Selenium	99.9		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

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

Reference Method: EPA 8321B
Batch ID: P412554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.5		P	30 - 160
2,4,5-T	105		P	30 - 160
Acetaminophen	88.1		P	30 - 150
Acetamiprid	104		P	30 - 160
Afidopyropen	72.8		P	30 - 160
Bentazon	59.1		P	30 - 150
Benzovindiflupyr	96.1		P	30 - 160
Carbamazepine	110		P	30 - 160
Clothianidin	108		P	30 - 160
Dinotefuran	104		P	30 - 160
Diuron	98.4		P	30 - 160
Fenuron	103		P	30 - 160
Fluridone	95.6		P	30 - 160
Hydrocodone	101		P	30 - 160
Ibuprofen	80.8		P	30 - 160
Imazapyr	98.9		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P412554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	104		P	30 - 160
Linuron	82.4		P	30 - 160
Mandestrobin	104		P	30 - 160
MCPP	116		P	30 - 160
Naproxen	112		P	30 - 160
Primidone	108		P	30 - 160
Pyraclostrobin	101		P	30 - 160
Silvex	106		P	30 - 160
Thiamethoxam	104		P	30 - 160
Tolfenpyrad	63.4		P	30 - 160
Triclopyr	112		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P412593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	99.6		P	40 - 150
Endothall	94.6		P	40 - 150
Glufosinate	96.6		P	40 - 150
Glyphosate	92.9		P	40 - 150
Sucralose	92.3		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P412808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P413141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P412742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P412872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319897	Calcium	97.8		P	80 - 120
2319897	Iron	105	106	P/P	80 - 120
2319897	Magnesium	104	104	P/P	80 - 120
2319897	Strontium	106	105	P/P	80 - 120
2319897	Tin	97.1	97.9	P/P	80 - 120
2319897	Titanium	97.7	99.0	P/P	80 - 120
2319897	Vanadium	94.1	95.1	P/P	80 - 120
2319897	Zinc	98.9	97.5	P/P	80 - 120
2320056	Calcium	99.6		P	80 - 120
2320056	Iron	105		P	80 - 120
2320056	Magnesium	107		P	80 - 120
2320056	Strontium	105		P	80 - 120
2320056	Tin	98.9		P	80 - 120
2320056	Titanium	99.9		P	80 - 120
2320056	Vanadium	96.4		P	80 - 120
2320056	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319897	Aluminum	99.1	101	P/P	80 - 120
2319897	Antimony	102	104	P/P	80 - 120
2319897	Arsenic	101	102	P/P	80 - 120
2319897	Barium	104	105	P/P	80 - 120
2319897	Beryllium	99.3	102	P/P	80 - 120
2319897	Boron	98.7	101	P/P	80 - 120
2319897	Cadmium	100	104	P/P	80 - 120
2319897	Chromium	100	102	P/P	80 - 120
2319897	Cobalt	102	104	P/P	80 - 120
2319897	Copper	97.7	99.1	P/P	80 - 120
2319897	Lead	98.7	101	P/P	80 - 120
2319897	Manganese	100	103	P/P	80 - 120
2319897	Molybdenum	100	102	P/P	80 - 120
2319897	Nickel	98.5	100	P/P	80 - 120
2319897	Selenium	98.9	100	P/P	80 - 120
2319897	Silver	103	105	P/P	80 - 120
2319897	Thallium	103	106	P/P	80 - 120
2320056	Aluminum	102		P	80 - 120
2320056	Antimony	103		P	80 - 120
2320056	Arsenic	103		P	80 - 120
2320056	Barium	105		P	80 - 120
2320056	Beryllium	102		P	80 - 120
2320056	Boron	105		P	80 - 120
2320056	Cadmium	103		P	80 - 120
2320056	Chromium	102		P	80 - 120
2320056	Cobalt	104		P	80 - 120
2320056	Copper	103		P	80 - 120
2320056	Lead	102		P	80 - 120
2320056	Manganese	104		P	80 - 120
2320056	Molybdenum	102		P	80 - 120
2320056	Nickel	102		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P412588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320056	Selenium	99.9		P	80 - 120
2320056	Silver	103		P	80 - 120
2320056	Thallium	105		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320007	Ammonia-N	97.8	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320396	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320253	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320049	Kjeldahl Nitrogen	109	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319985	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319760	NO2NO3-N	94.6	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319642	Total-P	91.3	92.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320021	Total-P	101	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P412554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319995	2,4-D	108	84.5	P/P	30 - 160
2319995	2,4,5-T	109	82.1	P/P	30 - 160
2319995	Acetaminophen	97.0	80.2	P/P	30 - 150
2319995	Acetamiprid	115	102	P/P	30 - 160
2319995	Afidopyropen	80.9	76.6	P/P	30 - 160
2319995	Bentazon	39.7	31.9	P/P	30 - 150
2319995	Benzovindiflupyr	88.7	76.5	P/P	30 - 160
2319995	Carbamazepine	102	88.3	P/P	30 - 160
2319995	Clothianidin	130	110	P/P	30 - 160
2319995	Dinotefuran	128	115	P/P	30 - 160
2319995	Diuron	84.0	73.4	P/P	30 - 160
2319995	Fenuron	87.8	77.7	P/P	30 - 160
2319995	Fluridone	90.0	75.0	P/P	30 - 160
2319995	Hydrocodone	110	89.0	P/P	30 - 160
2319995	Ibuprofen	76.8	68.1	P/P	30 - 160
2319995	Imazapyr	112	90.0	P/P	30 - 160
2319995	Imidacloprid	184	159	F/P	30 - 160
2319995	Linuron	70.8	64.4	P/P	30 - 160
2319995	Mandestrobin	95.0	81.5	P/P	30 - 160
2319995	MCCP	129	98.5	P/P	30 - 160
2319995	Naproxen	92.3	86.1	P/P	30 - 160
2319995	Primidone	106	105	P/P	30 - 160
2319995	Pyraclostrobin	97.7	80.9	P/P	30 - 160
2319995	Silvex	113	80.5	P/P	30 - 160
2319995	Thiamethoxam	170	148	F/P	30 - 160
2319995	Tolfenpyrad	61.0	48.9	P/P	30 - 160
2319995	Triclopyr	122	96.2	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P412593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319878	Acesulfame K	106	110	P/P	40 - 150
2319878	AMPA	106	108	P/P	40 - 150
2319878	Endothall	100	104	P/P	40 - 150
2319878	Glufosinate	98.5	106	P/P	40 - 150
2319878	Glyphosate	89.8	90.1	P/P	40 - 150
2319878	Sucralose	99.0	102	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319759	Fluoride	99.1	97.7	P/P	92 - 107

Reference Method: SM 4500-F- C-2011

Batch ID: P413148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320031	Fluoride	98.6	98.6	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P412742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320074	Organic Carbon	99.7	98.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P412872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319761	Organic Carbon	88.3	90.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P412572

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320005	Turbidity	2.14	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412588

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319897	Calcium	1.33	Spike	P	0 - 20
2319897	Iron	0.711	Spike	P	0 - 20
2319897	Magnesium	0.124	Spike	P	0 - 20
2319897	Strontium	1.15	Spike	P	0 - 20
2319897	Tin	0.828	Spike	P	0 - 20
2319897	Titanium	1.31	Spike	P	0 - 20
2319897	Vanadium	1.05	Spike	P	0 - 20
2319897	Zinc	1.42	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412588

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319897	Aluminum	1.64	Spike	P	0 - 20
2319897	Antimony	1.83	Spike	P	0 - 20
2319897	Arsenic	1.67	Spike	P	0 - 20
2319897	Barium	1.06	Spike	P	0 - 20
2319897	Beryllium	2.70	Spike	P	0 - 20
2319897	Boron	1.97	Spike	P	0 - 20
2319897	Cadmium	3.23	Spike	P	0 - 20
2319897	Chromium	1.30	Spike	P	0 - 20
2319897	Cobalt	1.61	Spike	P	0 - 20
2319897	Copper	1.46	Spike	P	0 - 20
2319897	Lead	2.21	Spike	P	0 - 20
2319897	Manganese	2.23	Spike	P	0 - 20
2319897	Molybdenum	2.14	Spike	P	0 - 20
2319897	Nickel	2.00	Spike	P	0 - 20
2319897	Selenium	1.52	Spike	P	0 - 20
2319897	Silver	2.52	Spike	P	0 - 20
2319897	Thallium	2.34	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P412707

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320007	Ammonia-N	0.542	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P412709

Replicated

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320396	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320253	Kjeldahl Nitrogen	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320049	Kjeldahl Nitrogen	4.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319985	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319760	NO2NO3-N	0.530	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319642	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320021	Total-P	2.39	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P412554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319995	2,4-D	24.1	Spike	P	0 - 30
2319995	2,4,5-T	28.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P412554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319995	Acetaminophen	18.9	Spike	P	0 - 30
2319995	Acetamiprid	11.4	Spike	P	0 - 30
2319995	Afidopyropen	5.51	Spike	P	0 - 30
2319995	Bentazon	21.7	Spike	P	0 - 30
2319995	Benzovindiflupyr	14.8	Spike	P	0 - 30
2319995	Carbamazepine	14.6	Spike	P	0 - 30
2319995	Clothianidin	17.0	Spike	P	0 - 30
2319995	Dinotefuran	10.6	Spike	P	0 - 30
2319995	Diuron	13.4	Spike	P	0 - 30
2319995	Fenuron	12.1	Spike	P	0 - 30
2319995	Fluridone	18.2	Spike	P	0 - 30
2319995	Hydrocodone	21.0	Spike	P	0 - 30
2319995	Ibuprofen	12.0	Spike	P	0 - 30
2319995	Imazapyr	21.5	Spike	P	0 - 30
2319995	Imidacloprid	14.8	Spike	P	0 - 30
2319995	Linuron	9.42	Spike	P	0 - 30
2319995	Mandestrobin	15.3	Spike	P	0 - 30
2319995	MCPP	26.9	Spike	P	0 - 30
2319995	Naproxen	6.90	Spike	P	0 - 30
2319995	Primidone	0.363	Spike	P	0 - 30
2319995	Pyraclostrobin	18.9	Spike	P	0 - 30
2319995	Silvex	33.3	Spike	F	0 - 30
2319995	Thiamethoxam	13.5	Spike	P	0 - 30
2319995	Tolfenpyrad	22.1	Spike	P	0 - 30
2319995	Triclopyr	23.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P412593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319878	Acesulfame K	3.55	Spike	P	0 - 30
2319878	AMPA	2.21	Spike	P	0 - 30
2319878	Endothall	3.93	Spike	P	0 - 30
2319878	Glufosinate	7.61	Spike	P	0 - 30
2319878	Glyphosate	0.343	Spike	P	0 - 30
2319878	Sucralose	3.20	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P412808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Total Alkalinity	3.36	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P413141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320031	Total Alkalinity	0.296	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P412992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319911	TSS	2.90	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 4500-F- C-2011
Batch ID: P413148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320031	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P412742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320074	Organic Carbon	0.755	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P412872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319761	Organic Carbon	1.75	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2320028

Field Sample ID: G3NW0182

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	78.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.1	P	30 - 160
EPA 8321B	Diuron-d6	79.8	P	30 - 160
EPA 8321B	Endothall-d6	94.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.3	P	30 - 160
EPA 8321B	Primidone-d5	84.1	P	30 - 160
EPA 8321B	Sucralose-d6	67.2	P	30 - 160

Lab Sample ID: 2320029

Field Sample ID: FB_04182022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	102	P	30 - 160
EPA 8321B	Diuron-d6	86.4	P	30 - 160
EPA 8321B	Endothall-d6	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.7	P	30 - 160
EPA 8321B	Primidone-d5	90.2	P	30 - 160
EPA 8321B	Sucralose-d6	98.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111559

Included Lab Sample IDs: 2320018, 2320020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111570

Included Lab Sample IDs: 2320021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111593

Included Lab Sample IDs: 2320019

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111601

Included Lab Sample IDs: 2320019, 2320021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	98.7	P/P	90 - 110
Ammonia-N	99.4	99.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111617

Included Lab Sample IDs: 2320030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Barium	102	100	P/P	90 - 110
Beryllium	99.4	98.2	P/P	90 - 110
Boron	99.0	98.5	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	100	99.9	P/P	90 - 110
Cobalt	102	103	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	98.4	98.5	P/P	90 - 110
Manganese	101	102	P/P	90 - 110
Molybdenum	99.6	99.6	P/P	90 - 110
Nickel	101	102	P/P	90 - 110
Selenium	100	100	P/P	90 - 110
Silver	105	105	P/P	90 - 110
Thallium	99.6	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A111622

Included Lab Sample IDs: 2320021

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

Reference Method: EPA 8321B

Run ID: A111640

Included Lab Sample IDs: 2320028, 2320029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	95.4	P/P	60 - 160
Acesulfame K	95.4	92.3	P/P	60 - 160
Sucralose	99.3	99.5	P/P	60 - 160
Sucralose	99.9	99.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111655

Included Lab Sample IDs: 2320028, 2320029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	110	P/P	60 - 160
AMPA	110	111	P/P	60 - 160
Endothall	100	102	P/P	60 - 160
Endothall	101	100	P/P	60 - 160
Glufosinate	106	104	P/P	60 - 160
Glufosinate	106	106	P/P	60 - 160
Glyphosate	103	102	P/P	60 - 160
Glyphosate	104	103	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A111656

Included Lab Sample IDs: 2320018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	95.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111656

Included Lab Sample IDs: 2320018

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

Reference Method: SM 5310 B-2011

Run ID: A111683

Included Lab Sample IDs: 2320019

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	93.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111687

Included Lab Sample IDs: 2320030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.2	99.5	P/P	90 - 110
Iron	99.3	101	P/P	90 - 110
Magnesium	99.6	101	P/P	90 - 110
Strontium	108	107	P/P	90 - 110
Tin	99.3	99.6	P/P	90 - 110
Titanium	98.6	99.6	P/P	90 - 110
Vanadium	99.7	101	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111701

Included Lab Sample IDs: 2320019

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

Reference Method: EPA 8321B

Run ID: A111767

Included Lab Sample IDs: 2320028, 2320029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.7	84.7	P/P	50 - 150
2,4,5-T	105	89.4	P/P	50 - 150
Acetaminophen	99.4	86.3	P/P	60 - 160
Acetamiprid	105	95.6	P/P	50 - 150
Afidopyropen	95.7	83.3	P/P	50 - 150
Bentazon	106	80.5	P/P	50 - 160
Benzovindiflupyr	113	92.6	P/P	50 - 150
Carbamazepine	105	93.3	P/P	60 - 150
Clothianidin	105	90.7	P/P	60 - 150
Dinotefuran	103	94.1	P/P	50 - 150
Diuron	105	97.2	P/P	60 - 160
Fenuron	101	97.6	P/P	60 - 150
Fluridone	107	107	P/P	60 - 160
Hydrocodone	104	87.6	P/P	60 - 150
Ibuprofen	107	110	P/P	50 - 160
Imazapyr	87.7	85.1	P/P	50 - 150
Imidacloprid	101	89.6	P/P	60 - 150
Linuron	98.3	95.8	P/P	60 - 150
Mandestrobin	112	103	P/P	50 - 150
MCPP	84.6	73.7	P/P	50 - 150
Naproxen	104	72.6	P/P	50 - 160
Primidone	91.2	91.9	P/P	60 - 150
Pyraclostrobin	120	108	P/P	60 - 150
Silvex	88.4	78.4	P/P	50 - 150
Thiamethoxam	102	91.9	P/P	50 - 150
Tolfenpyrad	108	99.4	P/P	60 - 150
Triclopyr	110	85.1	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111774

Included Lab Sample IDs: 2320021

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111776

Included Lab Sample IDs: 2320019

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

Reference Method: SM 2320 B-2011

Run ID: A111807

Included Lab Sample IDs: 2320020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	94.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111807

Included Lab Sample IDs: 2320020

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111862

Included Lab Sample IDs: 2320021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	92.6	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	95.5					2.14	
EPA 200.7 Rev. 4.4	Calcium	102	97.8	99.6				1.33
	Iron	105	105	106	105			0.711
	Magnesium	107	104	104	107			0.124
	Strontium	105	106	105	105			1.15
	Tin	98.0	97.1	97.9	98.9			0.828
	Titanium	97.2	97.7	99.0	99.9			1.31
	Vanadium	93.3	94.1	95.1	96.4			1.05
	Zinc	100	98.9	97.5	101			1.42
EPA 200.8 Rev. 5.4	Aluminum	102	99.1	101	102			1.64
	Antimony	102	102	104	103			1.83
	Arsenic	102	101	102	103			1.67
	Barium	105	104	105	105			1.06
	Beryllium	100	99.3	102	102			2.70
	Boron	99.8	98.7	101	105			1.97
	Cadmium	99.2	100	104	103			3.23
	Chromium	99.9	100	102	102			1.30
	Cobalt	103	102	104	104			1.61
	Copper	99.9	97.7	99.1	103			1.46
	Lead	99.6	98.7	101	102			2.21
	Manganese	101	100	103	104			2.23
	Molybdenum	100	100	102	102			2.14
	Nickel	101	98.5	100	102			2.00
	Selenium	99.9	98.9	100	99.9			1.52
	Silver	104	103	105	103			2.52
	Thallium	103	103	106	105			2.34
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	97.8	98.4				0.542
	Ammonia-N	98.6	98.8	100				1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	102	100				1.12
	Kjeldahl Nitrogen	97.2	109	102				4.42
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101				0.0
	NO2NO3-N	101	94.6	94.1				0.530
EPA 365.1 Rev. 2.0	Total-P	101	91.3	92.4				1.17
	Total-P	104	101	104				2.39
EPA 8321B	2,4-D	90.5	108	84.5				24.1
	2,4,5-T	105	109	82.1				28.6
	Acesulfame K	103	106	110				3.55
	Acetaminophen	88.1	97.0	80.2				18.9
	Acetamiprid	104	115	102				11.4
	Afidopyropen	72.8	80.9	76.6				5.51
	AMPA	99.6	106	108				2.21
	Bentazon	59.1	39.7	31.9				21.7
	Benzovindiflupyr	96.1	88.7	76.5				14.8
	Carbamazepine	110	102	88.3				14.6
	Clothianidin	108	130	110				17.0
	Dinotefuran	104	128	115				10.6
	Diuron	98.4	84.0	73.4				13.4
	Endothall	94.6	100	104				3.93
	Fenuron	103	87.8	77.7				12.1
	Fluridone	95.6	90.0	75.0				18.2
	Glufosinate	96.6	98.5	106				7.61
	Glyphosate	92.9	89.8	90.1				0.343
	Hydrocodone	101	110	89.0				21.0
	Ibuprofen	80.8	76.8	68.1				12.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Imazapyr	98.9	112	90.0			21.5
	Imidacloprid	104	184	159			14.8
	Linuron	82.4	70.8	64.4			9.42
	Mandestrobin	104	95.0	81.5			15.3
	MCPP	116	129	98.5			26.9
	Naproxen	112	92.3	86.1			6.90
	Primidone	108	106	105			0.363
	Pyraclostrobin	101	97.7	80.9			18.9
	Silvex	106	113	80.5			33.3
	Sucralose	92.3	99.0	102			3.20
	Thiamethoxam	104	170	148			13.5
	Tolfenpyrad	63.4	61.0	48.9			22.1
	Triclopyr	112	122	96.2			23.3
SM 2320 B-2011	Total Alkalinity	97.7				3.36	
	Total Alkalinity	96.7				0.296	
SM 2540 D-2011	TSS					2.90	
SM 4500-F- C-2011	Fluoride	101	99.1	97.7			0.953
	Fluoride	99.1	98.6	98.6			0.0
SM 5310 B-2011	Organic Carbon	95.0	99.7	98.4			0.755
	Organic Carbon	96.6	88.3	90.2			1.75

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2320018, 2320020
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2320030
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2320030
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2320019, 2320021
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2320019, 2320021
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2320019, 2320021
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2320019, 2320021
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2320028, 2320029
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2320018, 2320020
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2320030
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2320018, 2320020
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2320018, 2320020
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2320019, 2320021

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/19/2022			04/19/2022 14:21	Sarah A Nixon	2320018
	04/19/2022			04/19/2022 14:22	Sarah A Nixon	2320020
EPA 200.7 Rev. 4.4	04/19/2022	04/20/2022 10:20	Megan Whitefoot	04/25/2022 16:56	McKinley C Carter	2320030
EPA 200.8 Rev. 5.4	04/19/2022	04/20/2022 10:20	Megan Whitefoot	04/21/2022 22:19	Alexander Thompson	2320030
EPA 350.1 Rev. 2.0	04/19/2022			04/21/2022 11:29	Ping Hua	2320021
	04/19/2022			04/21/2022 12:11	Ping Hua	2320019
EPA 351.2 Rev. 2.0	04/19/2022	04/27/2022 16:11	Alexandra J Mattheus	04/28/2022 12:37	Alexandra J Mattheus	2320019
	04/19/2022	04/29/2022 09:35	Samantha L Bates	05/02/2022 15:30	Alexandra J Mattheus	2320021
EPA 353.2 Rev. 2.0	04/19/2022			04/20/2022 10:58	Beverly Y. Sanders	2320021
	04/19/2022			04/21/2022 10:14	Beverly Y. Sanders	2320019
EPA 365.1 Rev. 2.0	04/19/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/26/2022 16:11	James L Waggeberby	2320019
	04/19/2022	04/26/2022 14:30	Simonne.V. Calhoun	04/28/2022 14:43	James L Waggeberby	2320021
EPA 8321B	04/19/2022	04/20/2022 09:00	Hoor Shaik	04/21/2022 08:55	Juyoung Kim	2320028
	04/19/2022	04/20/2022 09:00	Hoor Shaik	04/21/2022 09:30	Juyoung Kim	2320029
	04/19/2022	04/20/2022 10:50	Manjita Shrestha	04/20/2022 20:12	Manjita Shrestha	2320028
	04/19/2022	04/20/2022 10:50	Manjita Shrestha	04/20/2022 20:42	Manjita Shrestha	2320029
	04/19/2022	04/20/2022 10:50	Manjita Shrestha	04/22/2022 15:04	Manjita Shrestha	2320028
	04/19/2022	04/20/2022 10:50	Manjita Shrestha	04/22/2022 15:30	Manjita Shrestha	2320029
	04/19/2022	04/20/2022 10:50	Manjita Shrestha	04/22/2022 19:50	Manjita Shrestha	2320028
SM 2320 B-2011	04/19/2022			04/22/2022 11:36	Sarah A Nixon	2320018
	04/19/2022			04/28/2022 20:12	Dale L. Simmons	2320020
SM 2340 B-2011	04/19/2022			04/25/2022 16:56	McKinley C Carter	2320030
SM 2540 D-2011	04/19/2022			04/20/2022 15:36	Yijie Li	2320018, 2320020
SM 4500-F- C-2011	04/19/2022			04/22/2022 14:10	Sarah A Nixon	2320018
	04/19/2022			04/28/2022 20:12	Dale L. Simmons	2320020
SM 5310 B-2011	04/19/2022			04/21/2022 19:42	Khloe J Berg	2320021
	04/19/2022			04/26/2022 00:56	Khloe J Berg	2320019