

Chemical Analysis Report

NW-DIST-2022-02-02-02

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

Event Description: **Milton South Run**
Request ID: **RQ-2022-01-31-53**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 24-FEB-2022 13:04

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first 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: Jakes Bayou upstream of Robinson Point Rd. Collection Date/Time: 02/01/2022 10:43

Field ID: G4NW0394

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303005	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P409359	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P409589	
	SM 2540 D-2011	TSS	3	IA	mg/L	P409812	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P409591	
2303006	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P409639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P409356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.097		mg N/L	P409380	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P409333	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P410124	
2303007	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409344	

Ref. Method and Comment:

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

Sample Location: Sandy Point Creek below Sandy Point Street Collection Date/Time: 02/01/2022 11:08

Field ID: G4NW0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303008	DEP SOP: NU-094-1	Color (true)**	110		PCU	P409353	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P409359	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P409477	
		Sulfate	2.5		mg SO4/L	P409479	
	SM 2320 B-2011	Total Alkalinity	5.6		mg CaCO3/L	P409546	
	SM 2540 C-2011	TDS	61		mg/L	P409806	
	SM 2540 D-2011	TSS	3	IA	mg/L	P409808	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409549	
2303009	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P409817	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P409538	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P409517	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P409510	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P409976	
2303010	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P409342	
2303016	EPA 8321B	2,4-D	0.0020	U	ug/L	P409301	
		Acesulfame K	0.16	I	ug/L	P409328	
		2,4,5-T	0.0040	U	ug/L	P409301	
		AMPA	0.10	U	ug/L	P409328	
		Acetaminophen	0.0080	U	ug/L	P409301	
		Acetamiprid	0.0020	U	ug/L	P409301	
		Endothall	0.25	U	ug/L	P409328	
		Glufosinate	0.10	U	ug/L	P409328	
		Glyphosate	0.10	U	ug/L	P409328	
		Afidopyropen	0.0020	U	ug/L	P409301	MS
		Bentazon	0.0075		ug/L	P409301	
		Sucralose	0.73		ug/L	P409328	
		Benzovindiflupyr	0.0020	U	ug/L	P409301	
		Carbamazepine	8.0E-04	U	ug/L	P409301	
		Clothianidin	0.0020	U	ug/L	P409301	
		Dinotefuran	0.0020	U	ug/L	P409301	
		Diuron	0.0020	U	ug/L	P409301	
		Fenuron	0.016	U	ug/L	P409301	
		Fluridone	8.0E-04	U	ug/L	P409301	
		Imazapyr	0.017		ug/L	P409301	
		Hydrocodone	0.0020	U	ug/L	P409301	
		Ibuprofen	0.020	U	ug/L	P409301	
		Imidacloprid	0.0020	U	ug/L	P409301	
		Linuron	0.0040	U	ug/L	P409301	
		Mandestrobin	0.0020	U	ug/L	P409301	
		MCP	0.0051	I	ug/L	P409301	
		Naproxen	0.0080	U	ug/L	P409301	
		Primidone	0.0080	I	ug/L	P409301	
		Pyraclostrobin	0.0020	U	ug/L	P409301	

Field ID: G4NW0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2303016	EPA 8321B	Silvex	0.0040	U	ug/L	P409301	
		Thiamethoxam	0.0020	U	ug/L	P409301	
		Tolfenpyrad	0.0020	U	ug/L	P409301	
		Triclopyr	0.0040	U	ug/L	P409301	
2303017	EPA 200.7 Rev. 4.4	Calcium	2.63		mg/L	P409414	
		Iron	770		ug/L	P409414	
		Magnesium	0.91		mg/L	P409414	
		Potassium	2.5		mg/L	P409414	
	EPA 200.8 Rev. 5.4	Sodium	13.0		mg/L	P409414	
		Strontium	7.1	I	ug/L	P409414	
		Tin	3.0	U	ug/L	P409414	
		Titanium	1.3	I	ug/L	P409414	
		Vanadium	2.0	U	ug/L	P409414	
		Zinc	5.0	U	ug/L	P409414	
		Aluminum	205		ug/L	P409414	
		Antimony	0.055	I	ug/L	P409414	
		Arsenic	0.30		ug/L	P409414	
		Barium	4.32		ug/L	P409414	
		Beryllium	0.010	U	ug/L	P409414	
		Boron**	69.3		ug/L	P409414	
		Cadmium	0.020	U	ug/L	P409414	
		Chromium	0.40	U	ug/L	P409414	
		Cobalt	0.109		ug/L	P409414	
		Copper	0.40	U	ug/L	P409414	
		Lead	0.33	I	ug/L	P409414	
		Manganese	7.09		ug/L	P409414	
		Molybdenum	0.15	U	ug/L	P409414	
	SM 2340B	Nickel	0.50	U	ug/L	P409414	
		Selenium	0.20	U	ug/L	P409414	
		Silver	0.010	U	ug/L	P409414	
		Thallium	0.10	U	ug/L	P409414	
		Hardness	10.3		mg/L	P409414	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P409353

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409414

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: P409414

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	0.25	I	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: P409477

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409817

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409538

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409510

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409342

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

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

Reference Method: EPA 8321B
Batch ID: P409301

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	0.016	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
Imidacloprid	0.0020	U	ug/L
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: EPA 8321B
Batch ID: P409328

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P409546

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P409589

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P409806

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409808

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409812

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409591

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409976

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

Reference Method: SM 5310 B-2011
Batch ID: P410124

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: P409353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.4		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	108		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	107		P	85 - 115
Sodium	105		P	85 - 115
Strontium	108		P	85 - 115
Tin	108		P	85 - 115
Titanium	106		P	85 - 115
Vanadium	98.5		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	106		P	85 - 115
Barium	107		P	85 - 115
Beryllium	103		P	85 - 115
Boron	98.9		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	104		P	85 - 115
Copper	103		P	85 - 115
Lead	99.1		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	104		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

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: P409517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409510

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409342

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

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

Reference Method: EPA 8321B
Batch ID: P409301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	91.8		P	40 - 150
2,4,5-T	73.8		P	40 - 150
Acetaminophen	87.0		P	30 - 150
Acetamiprid	94.5		P	40 - 150
Afidopyropen	75.7		P	40 - 150
Bentazon	101		P	30 - 150
Benzovindiflupyr	85.1		P	40 - 150
Carbamazepine	84.1		P	40 - 150
Clothianidin	86.7		P	40 - 150
Dinotefuran	90.6		P	40 - 150
Diuron	102		P	40 - 150
Fenuron	94.9		P	40 - 150
Fluridone	88.9		P	40 - 150
Hydrocodone	93.5		P	40 - 150
Ibuprofen	80.5		P	40 - 150
Imazapyr	96.2		P	40 - 150
Imidacloprid	94.7		P	40 - 150
Linuron	76.0		P	40 - 150
Mandestrobin	96.6		P	40 - 150
MCPP	92.2		P	40 - 150
Naproxen	60.9		P	40 - 150
Primidone	118		P	40 - 150
Pyraclostrobin	79.5		P	40 - 150
Silvex	69.8		P	40 - 150
Thiamethoxam	91.1		P	40 - 150
Tolfenpyrad	59.2		P	30 - 150
Triclopyr	75.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P409328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	80.3		P	40 - 150
AMPA	86.2		P	40 - 150
Endothall	78.3		P	40 - 150
Glufosinate	94.3		P	40 - 150
Glyphosate	88.9		P	40 - 150
Sucralose	81.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P409546

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P409589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P409591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.1		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P410124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P409414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303174	Calcium	99.9		P	80 - 120
2303174	Iron	109	107	P/P	80 - 120
2303174	Magnesium	97.3		P	80 - 120
2303174	Potassium	105	104	P/P	80 - 120
2303174	Sodium	99.3		P	80 - 120
2303174	Strontium	106	106	P/P	80 - 120
2303174	Tin	111	111	P/P	80 - 120
2303174	Titanium	105	106	P/P	80 - 120
2303174	Vanadium	101	102	P/P	80 - 120
2303174	Zinc	107	108	P/P	80 - 120
2303179	Calcium	97.5		P	80 - 120
2303179	Iron	104		P	80 - 120
2303179	Magnesium	99.2		P	80 - 120
2303179	Potassium	101		P	80 - 120
2303179	Sodium	98.1		P	80 - 120
2303179	Strontium	102		P	80 - 120
2303179	Tin	108		P	80 - 120
2303179	Titanium	102		P	80 - 120
2303179	Vanadium	97.2		P	80 - 120
2303179	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P409414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303174	Aluminum	99.0	100	P/P	80 - 120
2303174	Antimony	103	105	P/P	80 - 120
2303174	Arsenic	102	104	P/P	80 - 120
2303174	Barium	106	110	P/P	80 - 120
2303174	Beryllium	101	102	P/P	80 - 120
2303174	Boron	99.3	101	P/P	80 - 120
2303174	Cadmium	102	102	P/P	80 - 120
2303174	Chromium	102	104	P/P	80 - 120
2303174	Cobalt	99.5	102	P/P	80 - 120
2303174	Copper	98.7	100	P/P	80 - 120
2303174	Lead	98.5	100	P/P	80 - 120
2303174	Manganese	102	104	P/P	80 - 120
2303174	Molybdenum	102	105	P/P	80 - 120
2303174	Nickel	100	103	P/P	80 - 120
2303174	Selenium	97.0	101	P/P	80 - 120
2303174	Silver	99.3	102	P/P	80 - 120
2303174	Thallium	104	107	P/P	80 - 120
2303179	Aluminum	97.5		P	80 - 120
2303179	Antimony	104		P	80 - 120
2303179	Arsenic	102		P	80 - 120
2303179	Barium	106		P	80 - 120
2303179	Beryllium	104		P	80 - 120
2303179	Boron	96.3		P	80 - 120
2303179	Cadmium	102		P	80 - 120
2303179	Chromium	102		P	80 - 120
2303179	Cobalt	101		P	80 - 120
2303179	Copper	97.9		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303179	Lead	98.3		P	80 - 120
2303179	Manganese	103		P	80 - 120
2303179	Molybdenum	103		P	80 - 120
2303179	Nickel	100		P	80 - 120
2303179	Selenium	99.3		P	80 - 120
2303179	Silver	98.9		P	80 - 120
2303179	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302705	Chloride	92.6		P	90 - 110
2302862	Chloride	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302705	Sulfate	94.5		P	90 - 110
2302862	Sulfate	94.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303006	Ammonia-N	98.0	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302144	Ammonia-N	96.4	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302958	Kjeldahl Nitrogen	95.6	91.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302894	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302997	NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P409517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303009	NO2NO3-N	98.6	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P409333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303006	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P409510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303194	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P409342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302884	O-Phosphate-P	97.6	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P409344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302954	O-Phosphate-P	98.0	97.7	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P409301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302437	2,4-D	96.7	108	P/P	40 - 150
2302437	2,4,5-T	77.3	77.0	P/P	40 - 150
2302437	Acetaminophen	93.1	103	P/P	30 - 150
2302437	Acetamiprid	95.7	94.3	P/P	40 - 150
2302437	Afidopyropen	37.0	46.4	F/P	40 - 150
2302437	Bentazon	62.6	66.8	P/P	30 - 150
2302437	Benzovindiflupyr	76.4	95.6	P/P	40 - 150
2302437	Carbamazepine	88.4	89.6	P/P	40 - 150
2302437	Clothianidin	91.2	103	P/P	40 - 150
2302437	Dinotefuran	109	116	P/P	40 - 150
2302437	Diuron	72.3	90.8	P/P	40 - 150
2302437	Fenuron	83.6	91.1	P/P	40 - 150
2302437	Fluridone	78.6	88.9	P/P	40 - 150
2302437	Hydrocodone	89.3	75.4	P/P	40 - 150
2302437	Ibuprofen	68.3	72.9	P/P	40 - 150
2302437	Imazapyr	80.1	89.8	P/P	40 - 150
2302437	Imidacloprid	140	148	P/P	40 - 150
2302437	Linuron	83.3	81.3	P/P	40 - 150
2302437	Mandestrobin	88.5	92.8	P/P	40 - 150
2302437	MCPP	87.2	115	P/P	40 - 150
2302437	Naproxen	78.5	73.3	P/P	40 - 150
2302437	Primidone	108	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P409301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302437	Pyraclostrobin	80.8	91.6	P/P	40 - 150
2302437	Silvex	67.1	76.3	P/P	40 - 150
2302437	Thiamethoxam	105	115	P/P	40 - 150
2302437	Tolfenpyrad	43.9	50.5	P/P	30 - 150
2302437	Triclopyr	77.0	70.7	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P409328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302854	Acesulfame K	87.9	86.9	P/P	40 - 150
2302854	AMPA	97.4	101	P/P	40 - 150
2302854	Endothall	117	112	P/P	40 - 150
2302854	Glufosinate	84.4	88.2	P/P	40 - 150
2302854	Glyphosate	84.2	80.9	P/P	40 - 150
2302854	Sucralose	73.6	88.3	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P409549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303494	Fluoride	96.2	97.8	P/P	92 - 107

Reference Method: SM 4500 F-C-2011

Batch ID: P409591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303797	Fluoride	98.7	98.1	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P409976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302865	Organic Carbon	90.9	91.5	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P410124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303096	Organic Carbon	91.9	95.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P409353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302892	Color (true)	1.83	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302863	Turbidity	0.292	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P409414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303174	Calcium	0.309	Spike	P	0 - 20
2303174	Iron	2.48	Spike	P	0 - 20
2303174	Magnesium	1.87	Spike	P	0 - 20
2303174	Potassium	1.10	Spike	P	0 - 20
2303174	Sodium	0.452	Spike	P	0 - 20
2303174	Strontium	0.209	Spike	P	0 - 20
2303174	Tin	0.0358	Spike	P	0 - 20
2303174	Titanium	0.683	Spike	P	0 - 20
2303174	Vanadium	1.10	Spike	P	0 - 20
2303174	Zinc	0.646	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P409414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303174	Aluminum	1.19	Spike	P	0 - 20
2303174	Antimony	1.34	Spike	P	0 - 20
2303174	Arsenic	1.68	Spike	P	0 - 20
2303174	Barium	3.10	Spike	P	0 - 20
2303174	Beryllium	0.613	Spike	P	0 - 20
2303174	Boron	1.49	Spike	P	0 - 20
2303174	Cadmium	0.134	Spike	P	0 - 20
2303174	Chromium	1.41	Spike	P	0 - 20
2303174	Cobalt	2.02	Spike	P	0 - 20
2303174	Copper	1.69	Spike	P	0 - 20
2303174	Lead	1.74	Spike	P	0 - 20
2303174	Manganese	1.31	Spike	P	0 - 20
2303174	Molybdenum	2.88	Spike	P	0 - 20
2303174	Nickel	2.16	Spike	P	0 - 20
2303174	Selenium	3.67	Spike	P	0 - 20
2303174	Silver	2.31	Spike	P	0 - 20
2303174	Thallium	2.93	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	Chloride	0.974	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	Sulfate	1.26	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303006	Ammonia-N	0.351	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302144	Ammonia-N	0.345	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302958	Kjeldahl Nitrogen	3.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302894	Kjeldahl Nitrogen	0.276	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302997	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303009	NO2NO3-N	0.447	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P409333

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303006	Total-P	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P409510

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303194	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P409342

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302884	O-Phosphate-P	1.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P409344

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302954	O-Phosphate-P	0.255	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P409301

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302437	2,4-D	7.92	Spike	P	0 - 30
2302437	2,4,5-T	0.436	Spike	P	0 - 30
2302437	Acetaminophen	10.1	Spike	P	0 - 30
2302437	Acetamiprid	1.43	Spike	P	0 - 30
2302437	Afidopyropen	22.6	Spike	P	0 - 30
2302437	Bentazon	3.89	Spike	P	0 - 30
2302437	Benzovindiflupyr	22.3	Spike	P	0 - 30
2302437	Carbamazepine	1.35	Spike	P	0 - 30
2302437	Clothianidin	11.8	Spike	P	0 - 30
2302437	Dinotefuran	5.57	Spike	P	0 - 30
2302437	Diuron	22.7	Spike	P	0 - 30
2302437	Fenuron	8.58	Spike	P	0 - 30
2302437	Fluridone	12.4	Spike	P	0 - 30
2302437	Hydrocodone	16.9	Spike	P	0 - 30
2302437	Ibuprofen	6.48	Spike	P	0 - 30
2302437	Imazapyr	8.12	Spike	P	0 - 30
2302437	Imidacloprid	5.35	Spike	P	0 - 30
2302437	Linuron	2.43	Spike	P	0 - 30
2302437	Mandestrobin	4.81	Spike	P	0 - 30
2302437	MCP	27.2	Spike	P	0 - 30
2302437	Naproxen	6.88	Spike	P	0 - 30
2302437	Primidone	0.580	Spike	P	0 - 30
2302437	Pyraclostrobin	12.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P409301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302437	Silvex	12.8	Spike	P	0 - 30
2302437	Thiamethoxam	7.81	Spike	P	0 - 30
2302437	Tolfenpyrad	14.1	Spike	P	0 - 30
2302437	Triclopyr	8.55	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P409328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302854	Acesulfame K	1.05	Spike	P	0 - 30
2302854	AMPA	3.83	Spike	P	0 - 30
2302854	Endothall	4.94	Spike	P	0 - 30
2302854	Glufosinate	4.34	Spike	P	0 - 30
2302854	Glyphosate	3.99	Spike	P	0 - 30
2302854	Sucralose	15.9	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P409546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303494	Total Alkalinity	1.12	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P409589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303797	Total Alkalinity	1.23	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302832	TDS	5.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303494	Fluoride	0.993	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P409591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303797	Fluoride	0.483	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P409976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302865	Organic Carbon	0.408	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P410124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303096	Organic Carbon	3.48	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2303016

Field Sample ID: G4NW0080

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	68.2	P	30 - 160
EPA 8321B	Endothall-d6	91.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.8	P	30 - 160
EPA 8321B	Primidone-d5	71.3	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110154

Included Lab Sample IDs: 2303008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	99.3	P/P	90 - 110
Sulfate	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110180

Included Lab Sample IDs: 2303007, 2303010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A110184

Included Lab Sample IDs: 2303008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110185

Included Lab Sample IDs: 2303005, 2303008

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110192

Included Lab Sample IDs: 2303006

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

Reference Method: EPA 8321B

Run ID: A110230

Included Lab Sample IDs: 2303016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.0	89.9	P/P	60 - 160
Endothall	75.1	71.0	P/P	60 - 160
Sucralose	73.5	78.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A110234

Included Lab Sample IDs: 2303016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	119	129	P/P	60 - 160
Glufosinate	83.8	89.7	P/P	60 - 160
Glyphosate	79.4	89.4	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A110243
Included Lab Sample IDs: 2303016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	110	P/P	50 - 150
2,4,5-T	100	92.7	P/P	50 - 150
Acetaminophen	109	102	P/P	60 - 160
Acetamiprid	112	105	P/P	50 - 150
Afidopyropen	100	110	P/P	50 - 150
Bentazon	105	115	P/P	50 - 160
Benzovindiflupyr	108	116	P/P	50 - 150
Carbamazepine	97.0	96.8	P/P	60 - 150
Clothianidin	117	105	P/P	60 - 150
Dinotefuran	104	99.5	P/P	50 - 150
Diuron	105	118	P/P	60 - 160
Fenuron	104	101	P/P	60 - 150
Fluridone	103	103	P/P	60 - 160
Hydrocodone	102	104	P/P	60 - 150
Ibuprofen	61.8	100	P/P	50 - 160
Imazapyr	83.1	92.6	P/P	50 - 150
Imidacloprid	94.2	97.4	P/P	60 - 150
Linuron	91.9	126	P/P	60 - 150
Mandestrobin	106	119	P/P	50 - 150
MCPP	82.0	89.8	P/P	50 - 150
Naproxen	89.6	103	P/P	50 - 160
Primidone	115	86.3	P/P	60 - 150
Pyraclostrobin	92.9	98.2	P/P	60 - 150
Silvex	103	106	P/P	50 - 150
Thiamethoxam	106	104	P/P	50 - 150
Tolfenpyrad	101	133	P/P	60 - 150
Triclopyr	89.3	87.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A110250
Included Lab Sample IDs: 2303017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	98.4	P/P	90 - 110
Antimony	95.6	97.6	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Boron	91.0	92.6	P/P	90 - 110
Cadmium	98.0	99.9	P/P	90 - 110
Chromium	98.5	101	P/P	90 - 110
Cobalt	100	99.4	P/P	90 - 110
Copper	101	100	P/P	90 - 110
Lead	95.5	96.3	P/P	90 - 110
Manganese	98.6	101	P/P	90 - 110
Molybdenum	99.2	100	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	96.6	98.0	P/P	90 - 110
Silver	91.3	91.6	P/P	90 - 110
Thallium	102	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110264

Included Lab Sample IDs: 2303009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110265

Included Lab Sample IDs: 2303006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	95.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110272

Included Lab Sample IDs: 2303017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	99.4	99.9	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Strontium	105	104	P/P	90 - 110
Tin	104	106	P/P	90 - 110
Titanium	103	104	P/P	90 - 110
Vanadium	103	104	P/P	90 - 110
Zinc	104	109	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110273

Included Lab Sample IDs: 2303017

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.5	96.6	P/P	90 - 110
Beryllium	94.5	93.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110279

Included Lab Sample IDs: 2303008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	96.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110279

Included Lab Sample IDs: 2303008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110285

Included Lab Sample IDs: 2303006

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

Reference Method: SM 2320 B-2011

Run ID: A110292

Included Lab Sample IDs: 2303005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.5	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110292

Included Lab Sample IDs: 2303005

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110313

Included Lab Sample IDs: 2303006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.9	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110324

Included Lab Sample IDs: 2303009

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110335

Included Lab Sample IDs: 2303009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.8	92.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110400

Included Lab Sample IDs: 2303009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110463

Included Lab Sample IDs: 2303009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	93.6	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A110522

Included Lab Sample IDs: 2303006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.1	94.2	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	99.1					1.83	
EPA 180.1 Rev. 2.0	Turbidity	96.4					0.292	
EPA 200.7 Rev. 4.4	Calcium	103	99.9	97.5				0.309
	Iron	108	109	107	104			2.48
	Magnesium	103	97.3	99.2				1.87
	Potassium	107	105	104	101			1.10
	Sodium	105	99.3	98.1				0.452
	Strontium	108	106	106	102			0.209
	Tin	108	111	111	108			0.0358
	Titanium	106	105	106	102			0.683
	Vanadium	98.5	101	102	97.2			1.10
	Zinc	103	107	108	101			0.646
EPA 200.8 Rev. 5.4	Aluminum	101	99.0	100	97.5			1.19
	Antimony	103	103	105	104			1.34
	Arsenic	106	102	104	102			1.68
	Barium	107	106	110	106			3.10
	Beryllium	103	101	102	104			0.613
	Boron	98.9	99.3	101	96.3			1.49
	Cadmium	102	102	102	102			0.134
	Chromium	101	102	104	102			1.41
	Cobalt	104	99.5	102	101			2.02
	Copper	103	98.7	100	97.9			1.69
	Lead	99.1	98.5	100	98.3			1.74
	Manganese	102	102	104	103			1.31
	Molybdenum	102	102	105	103			2.88
	Nickel	104	100	103	100			2.16
	Selenium	103	97.0	101	99.3			3.67
	Silver	101	99.3	102	98.9			2.31
	Thallium	104	104	107	103			2.93
EPA 300.0 Rev. 2.1	Chloride	99.1	92.6	94.5			0.974	
	Sulfate	96.9	94.5	94.5			1.26	
EPA 350.1 Rev. 2.0	Ammonia-N	94.6	98.0	97.4				0.351
	Ammonia-N	99.0	96.4	96.8				0.345
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	95.6	91.9				3.35
	Kjeldahl Nitrogen	99.1	101	101				0.276
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	100				0.0
	NO2NO3-N	100	98.6	98.1				0.447
EPA 365.1 Rev. 2.0	Total-P	103	101	102				1.06
	Total-P	104	107	107				0.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	97.6	99.0				1.42
	O-Phosphate-P	101	98.0	97.7				0.255
EPA 8321B	2,4-D	91.8	96.7	108				7.92
	2,4,5-T	73.8	77.3	77.0				0.436
	Acesulfame K	80.3	87.9	86.9				1.05
	Acetaminophen	87.0	93.1	103				10.1
	Acetamiprid	94.5	95.7	94.3				1.43
	Afidopyropen	75.7	37.0	46.4				22.6
	AMPA	86.2	97.4	101				3.83
	Bentazon	101	62.6	66.8				3.89
	Benzovindiflupyr	85.1	76.4	95.6				22.3
	Carbamazepine	84.1	88.4	89.6				1.35
	Clothianidin	86.7	91.2	103				11.8
	Dinotefuran	90.6	109	116				5.57
	Diuron	102	72.3	90.8				22.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Endothall	78.3	117	112			4.94
	Fenuron	94.9	83.6	91.1			8.58
	Fluridone	88.9	78.6	88.9			12.4
	Glufosinate	94.3	84.4	88.2			4.34
	Glyphosate	88.9	84.2	80.9			3.99
	Hydrocodone	93.5	89.3	75.4			16.9
	Ibuprofen	80.5	68.3	72.9			6.48
	Imazapyr	96.2	80.1	89.8			8.12
	Imidacloprid	94.7	140	148			5.35
	Linuron	76.0	83.3	81.3			2.43
	Mandestrobin	96.6	88.5	92.8			4.81
	MCPP	92.2	87.2	115			27.2
	Naproxen	60.9	78.5	73.3			6.88
	Primidone	118	108	109			0.580
	Pyraclostrobin	79.5	80.8	91.6			12.4
	Silvex	69.8	67.1	76.3			12.8
	Sucralose	81.9	73.6	88.3			15.9
	Thiamethoxam	91.1	105	115			7.81
	Tolfenpyrad	59.2	43.9	50.5			14.1
	Triclopyr	75.3	77.0	70.7			8.55
SM 2320 B-2011	Total Alkalinity	100				1.12	
	Total Alkalinity	99.1				1.23	
SM 2540 C-2011	TDS					5.84	
SM 4500 F-C-2011	Fluoride	97.3	96.2	97.8			0.993
	Fluoride	97.8	98.7	98.1			0.483
SM 5310 B-2011	Organic Carbon	92.1	90.9	91.5			0.408
	Organic Carbon	98.1	91.9	95.4			3.48

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2303008
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2303005, 2303008
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2303017
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2303017
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2303008
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2303008
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2303006, 2303009
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2303006, 2303009
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2303006, 2303009
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2303006, 2303009
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2303007, 2303010
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2303016
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2303005, 2303008
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2303017
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2303008
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2303005, 2303008
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2303005, 2303008
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2303006, 2303009

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	02/02/2022			02/02/2022 15:26	Anna M. Plaviak	2303008
EPA 180.1 Rev. 2.0	02/02/2022			02/02/2022 14:49	Khloe J Berg	2303005
	02/02/2022			02/02/2022 14:50	Khloe J Berg	2303008
EPA 200.7 Rev. 4.4	02/02/2022	02/04/2022 09:37	Emily M Philpot	02/07/2022 14:10	Josef B Mick	2303017
EPA 200.8 Rev. 5.4	02/02/2022	02/04/2022 09:37	Emily M Philpot	02/04/2022 21:34	Alexander Thompson	2303017
	02/02/2022	02/04/2022 09:37	Emily M Philpot	02/07/2022 14:58	Alexander Thompson	2303017
EPA 300.0 Rev. 2.1	02/02/2022			02/04/2022 17:50	James L Waggeberby	2303008
EPA 350.1 Rev. 2.0	02/02/2022			02/09/2022 14:14	Roberta Tatti	2303006
	02/02/2022			02/14/2022 15:24	Roberta Tatti	2303009
EPA 351.2 Rev. 2.0	02/02/2022	02/03/2022 10:45	Samantha L Bates	02/04/2022 14:19	Alexandra J Mattheus	2303006
	02/02/2022	02/09/2022 15:02	Samantha L Bates	02/10/2022 13:14	Alexandra J Mattheus	2303009
EPA 353.2 Rev. 2.0	02/02/2022			02/03/2022 09:56	Beverly Y. Sanders	2303006
	02/02/2022			02/07/2022 10:57	Beverly Y. Sanders	2303009
EPA 365.1 Rev. 2.0	02/02/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/08/2022 14:42	Shengyu Ding	2303006
	02/02/2022	02/08/2022 14:30	Simonne.V. Calhoun	02/09/2022 14:43	Shengyu Ding	2303009
EPA 365.1 Rev. 2.0 dissolved	02/02/2022			02/02/2022 13:58	James L Waggeberby	2303010
	02/02/2022			02/02/2022 14:32	James L Waggeberby	2303007
EPA 8321B	02/02/2022	02/02/2022 14:30	Manjita Shrestha	02/02/2022 15:43	Manjita Shrestha	2303016
	02/02/2022	02/02/2022 14:30	Manjita Shrestha	02/03/2022 13:29	Manjita Shrestha	2303016
	02/02/2022	02/03/2022 08:55	Hoor Shaik	02/04/2022 07:34	Juyoung Kim	2303016
SM 2320 B-2011	02/02/2022			02/08/2022 03:10	Dale L. Simmons	2303008
	02/02/2022			02/08/2022 22:46	Dale L. Simmons	2303005
SM 2340B	02/02/2022			02/07/2022 14:10	Josef B Mick	2303017
SM 2540 C-2011	02/02/2022			02/04/2022 14:55	Yijie Li	2303008
SM 2540 D-2011	02/02/2022			02/04/2022 14:55	Yijie Li	2303005, 2303008
SM 4500 F-C-2011	02/02/2022			02/08/2022 03:10	Dale L. Simmons	2303008
	02/02/2022			02/08/2022 22:46	Dale L. Simmons	2303005
SM 5310 B-2011	02/02/2022			02/16/2022 18:54	Nathaniel J Jones	2303009
	02/02/2022			02/21/2022 09:44	Touraj Touran	2303006