Chemical Analysis Report

TLH-ROC-2022-01-27-01

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

Event Description: **Run 11**
Request ID: **RQ-2022-01-10-34**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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: Colin Wright, Program Administrator

Date Certified: 24-FEB-2022 09:49

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: 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: Sandy Creek **Collection Date/Time: 01/27/2022 10:15**

Field ID: G3TLHR0001 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302257	DEP SOP: NU-094-1	Color (true)**	48	A	PCU	P409159	
	EPA 180.1 Rev. 2.0	Turbidity	3.8	A	NTU	P409164	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P409419	
		Sulfate	2.3		mg SO4/L	P409422	
	SM 2320 B-2011	Total Alkalinity	0.79	I	mg CaCO3/L	P409432	
	SM 2540 C-2011	TDS	30		mg/L	P409662	
	SM 2540 D-2011	TSS	2	I	mg/L	P409664	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409435	
2302258	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P409635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P409240	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P409243	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P409183	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P409830	
2302259	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409157	

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: Mule Creek @ Alvie Holmes Rd **Collection Date/Time: 01/27/2022 10:35**

Field ID: G3TLHR0017 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302263	DEP SOP: NU-094-1	Color (true)**	24		PCU	P409159	
	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P409164	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P409419	
		Sulfate	8.1		mg SO4/L	P409780	
	SM 2320 B-2011	Total Alkalinity	4.2		mg CaCO3/L	P409433	
	SM 2540 C-2011	TDS	111	Q	mg/L	P410162	
	SM 2540 D-2011	TSS	4	I A	mg/L	P409667	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409436	
2302264	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P409350	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P409238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P410168	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P409182	
	SM 5310 B-2011	Organic Carbon	3.2	J	mg C/L	P409916	CCV
2302265	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409158	
2302276	EPA 8321B	2,4-D	0.0020	U	ug/L	P409048	
		Acesulfame K	0.10	U	ug/L	P409131	
		2,4,5-T	0.0040	U	ug/L	P409048	
		AMPA	10	U	ug/L	P409131	
		Acetaminophen	0.0080	U	ug/L	P409048	
		Acetamiprid	0.0020	U	ug/L	P409048	
		Endothall	0.25	U	ug/L	P409131	MS
		Glufosinate	10	U	ug/L	P409131	
		Glyphosate	10	U	ug/L	P409131	
		Afidopyropen	0.0020	U	ug/L	P409048	
		Bentazon	8.0E-04	U	ug/L	P409048	
		Sucralose	0.023	I	ug/L	P409131	
		Benzovindiflupyr	0.0020	U	ug/L	P409048	
		Carbamazepine	8.0E-04	U	ug/L	P409048	
		Clothianidin	0.0020	U	ug/L	P409048	
		Dinotefuran	0.0020	U	ug/L	P409048	
		Diuron	0.0020	U	ug/L	P409048	
		Fenuron	0.016	U	ug/L	P409048	
		Fluridone	8.0E-04	U	ug/L	P409048	
		Imazapyr	0.0040	U	ug/L	P409048	
		Hydrocodone	0.0020	U	ug/L	P409048	
		Ibuprofen	0.020	U	ug/L	P409048	
		Imidacloprid	0.0020	U	ug/L	P409048	
		Linuron	0.0040	U	ug/L	P409048	
		Mandestrobin	0.0020	U	ug/L	P409048	
		MCPP	0.0020	U	ug/L	P409048	
		Naproxen	0.0080	U	ug/L	P409048	
		Primidone	0.0040	U	ug/L	P409048	
		Pyraclostrobin	0.0020	U	ug/L	P409048	

Field ID: G3TLHR0017 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302276	EPA 8321B	Silvex	0.0040	U	ug/L	P409048	
		Thiamethoxam	0.0020	U	ug/L	P409048	
		Tolfenpyrad	0.0020	U	ug/L	P409048	
		Triclopyr	0.0040	U	ug/L	P409048	

Ref. Method and Comment:
SM 2540 C-2011: The sample was reanalyzed out of holding time because of analytical difficulties. The reported result is consistent with the conductivity measured in the laboratory, 232 umhos/cm.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: Sandy Creek @ Mouth 0051 **Collection Date/Time: 01/27/2022 11:20**

Field ID: G3TLHR0051 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302260	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P409164	
	SM 2320 B-2011	Total Alkalinity	48	A	mg CaCO3/L	P409434	
	SM 2540 D-2011	TSS	6	I	mg/L	P409667	
	SM 4500 F-C-2011	Fluoride	0.28		mg F/L	P409437	
2302261	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P409350	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P409238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P409318	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P409182	
	SM 5310 B-2011	Organic Carbon	5.0	J	mg C/L	P409916	CCV
2302262	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409158	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P409159

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409164

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409419

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409780

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409350

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409635

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409238

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409240

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409243

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409318

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410168

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409182

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409183

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409157

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409158

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

Reference Method: EPA 8321B
Batch ID: P409048

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P409048

Component	Result	Code	Units
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	0.0020	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: P409131

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: P409432

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

Reference Method: SM 2320 B-2011
Batch ID: P409433

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

Reference Method: SM 2320 B-2011
Batch ID: P409434

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

Reference Method: SM 2540 C-2011
Batch ID: P409662

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P410162

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409667

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409435

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409437

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409830

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

Reference Method: SM 5310 B-2011
Batch ID: P409916

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: P409159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409419

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409780

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409350

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409240

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409243

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409318

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410168

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: P409182

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409183

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409157

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409158

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

Reference Method: EPA 8321B
Batch ID: P409048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.2		P	30 - 160
2,4,5-T	75.5		P	30 - 160
Acetaminophen	96.0		P	30 - 160
Acetamiprid	98.2		P	30 - 160
Afidopyropen	71.9		P	30 - 160
Bentazon	105		P	30 - 160
Benzovindiflupyr	93.1		P	30 - 160
Carbamazepine	99.5		P	30 - 160
Clothianidin	106		P	30 - 160
Dinotefuran	105		P	30 - 160
Diuron	92.4		P	30 - 160
Fenuron	111		P	30 - 160
Fluridone	97.5		P	30 - 160
Hydrocodone	115		P	30 - 160
Ibuprofen	79.1		P	30 - 160
Imazapyr	149		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P409048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	91.8		P	30 - 160
Linuron	84.1		P	30 - 160
Mandestrobin	99.1		P	30 - 160
MCPP	108		P	30 - 160
Naproxen	98.5		P	30 - 160
Primidone	99.4		P	30 - 160
Pyraclostrobin	92.4		P	30 - 160
Silvex	69.8		P	30 - 160
Thiamethoxam	96.0		P	30 - 160
Tolfenpyrad	52.0		P	30 - 160
Triclopyr	75.5		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P409131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	75.4		P	40 - 150
AMPA	104		P	40 - 150
Endothall	97.4		P	40 - 150
Glufosinate	92.0		P	40 - 150
Glyphosate	87.3		P	40 - 150
Sucralose	95.1		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P409432

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P409433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P409434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409435

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	93 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P409437

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302141	Chloride	98.9		P	90 - 110
2302392	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302141	Sulfate	98.7		P	90 - 110
2302392	Sulfate	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303352	Sulfate	96.9		P	90 - 110
2303444	Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302048	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302195	Ammonia-N	97.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302350	Kjeldahl Nitrogen	102	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302258	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302258	NO2NO3-N	99.4	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302049	NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305155	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302264	Total-P	98.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302298	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302285	O-Phosphate-P	97.4	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302351	O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P409048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301732	2,4-D	148	149	P/P	30 - 160
2301732	2,4,5-T	102	114	P/P	30 - 160
2301732	Acetaminophen	125	134	P/P	30 - 160
2301732	Acetamiprid	106	90.2	P/P	30 - 160
2301732	Afidopyropen	58.6	51.0	P/P	30 - 160
2301732	Benzovindiflupyr	92.0	94.0	P/P	30 - 160
2301732	Clothianidin	150	150	P/P	30 - 160
2301732	Dinotefuran	146	146	P/P	30 - 160
2301732	Diuron	88.9	84.5	P/P	30 - 160
2301732	Fenuron	89.8	92.5	P/P	30 - 160
2301732	Fluridone	106	102	P/P	30 - 160
2301732	Hydrocodone	120	120	P/P	30 - 160
2301732	Ibuprofen	71.8	77.6	P/P	30 - 160
2301732	Linuron	76.3	78.5	P/P	30 - 160
2301732	Mandestrobin	97.2	98.3	P/P	30 - 160
2301732	MCPP	138	142	P/P	30 - 160
2301732	Naproxen	89.4	106	P/P	30 - 160
2301732	Primidone	133	121	P/P	30 - 160
2301732	Pyraclostrobin	94.0	97.3	P/P	30 - 160
2301732	Silvex	102	111	P/P	30 - 160
2301732	Thiamethoxam	159	159	P/P	30 - 160
2301732	Tolfenpyrad	54.7	58.9	P/P	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P409048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301732	Triclopyr	110	120	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P409131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302159	Acesulfame K	111	114	P/P	40 - 150
2302159	AMPA	90.2	101	P/P	40 - 150
2302159	Endothall	145	157	P/F	40 - 150
2302159	Glufosinate	91.2	89.6	P/P	40 - 150
2302159	Glyphosate	70.5	77.8	P/P	40 - 150
2302159	Sucralose	107	112	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P409435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302832	Fluoride	98.2	97.6	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302600	Fluoride	99.2	98.5	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P409437

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302260	Fluoride	97.7	98.3	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302038	Organic Carbon	97.1	97.8	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302142	Organic Carbon	89.8	90.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P409159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302257	Color (true)	3.53	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302257	Turbidity	3.42	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302141	Chloride	0.524	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302141	Sulfate	1.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303352	Sulfate	0.240	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302048	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302195	Ammonia-N	2.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302350	Kjeldahl Nitrogen	4.02	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302258	Kjeldahl Nitrogen	0.0340	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302258	NO2NO3-N	0.349	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302049	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305155	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302264	Total-P	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302298	Total-P	0.263	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302285	O-Phosphate-P	0.920	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302351	O-Phosphate-P	0.558	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P409048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301732	2,4-D	0.393	Spike	P	0 - 30
2301732	2,4,5-T	11.7	Spike	P	0 - 30
2301732	Acetaminophen	7.07	Spike	P	0 - 30
2301732	Acetamiprid	15.9	Spike	P	0 - 30
2301732	Afidopyropen	14.0	Spike	P	0 - 30
2301732	Bentazon	1.54	Spike	P	0 - 30
2301732	Benzovindiflupyr	2.22	Spike	P	0 - 30
2301732	Carbamazepine	1.98	Spike	P	0 - 30
2301732	Clothianidin	0.548	Spike	P	0 - 30
2301732	Dinotefuran	0.243	Spike	P	0 - 30
2301732	Diuron	5.16	Spike	P	0 - 30
2301732	Fenuron	2.99	Spike	P	0 - 30
2301732	Fluridone	2.46	Spike	P	0 - 30
2301732	Hydrocodone	0.721	Spike	P	0 - 30
2301732	Ibuprofen	7.74	Spike	P	0 - 30
2301732	Imazapyr	5.54	Spike	P	0 - 30
2301732	Imidacloprid	1.01	Spike	P	0 - 30
2301732	Linuron	2.84	Spike	P	0 - 30
2301732	Mandestrobin	1.10	Spike	P	0 - 30
2301732	MCPP	2.78	Spike	P	0 - 30
2301732	Naproxen	16.5	Spike	P	0 - 30
2301732	Primidone	5.78	Spike	P	0 - 30
2301732	Pyraclostrobin	3.49	Spike	P	0 - 30
2301732	Silvex	8.67	Spike	P	0 - 30
2301732	Thiamethoxam	0.436	Spike	P	0 - 30
2301732	Tolfenpyrad	7.51	Spike	P	0 - 30
2301732	Triclopyr	8.70	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P409131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302159	Acesulfame K	3.32	Spike	P	0 - 30
2302159	AMPA	11.1	Spike	P	0 - 30
2302159	Endothall	8.15	Spike	P	0 - 30
2302159	Glufosinate	1.73	Spike	P	0 - 30
2302159	Glyphosate	9.89	Spike	P	0 - 30
2302159	Sucralose	4.04	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P409432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302832	Total Alkalinity	0.585	Sample	P	0 - 5.2

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P409433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302600	Total Alkalinity	0.518	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P409434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302260	Total Alkalinity	1.34	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302392	TDS	0.930	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P410162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305384	TDS	3.68	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302832	Fluoride	0.484	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P409436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302600	Fluoride	0.480	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P409437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302260	Fluoride	0.480	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302038	Organic Carbon	0.442	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P409916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302142	Organic Carbon	0.953	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2302276
Field Sample ID: G3TLHR0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	90.4	P	30 - 160
EPA 8321B	Endothall-d6	98.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.2	P	30 - 160
EPA 8321B	Primidone-d5	97.2	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A110106
Included Lab Sample IDs: 2302259, 2302262, 2302265

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.9	P/P	90 - 110
O-Phosphate-P	99.9	99.9	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1
Run ID: A110107
Included Lab Sample IDs: 2302257, 2302263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A110111
Included Lab Sample IDs: 2302257, 2302260, 2302263

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110144
Included Lab Sample IDs: 2302258

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

Reference Method: EPA 8321B
Run ID: A110148
Included Lab Sample IDs: 2302276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.0	78.8	P/P	50 - 150
2,4,5-T	72.4	69.7	P/P	50 - 150
Acetaminophen	118	119	P/P	60 - 160
Acetamiprid	107	107	P/P	50 - 150
Afidopyropen	99.1	102	P/P	50 - 150
Bentazon	79.2	92.1	P/P	50 - 160
Benzovindiflupyr	108	105	P/P	50 - 160
Carbamazepine	107	108	P/P	60 - 150
Clothianidin	119	128	P/P	60 - 150
Dinotefuran	121	118	P/P	50 - 150
Diuron	117	109	P/P	60 - 160
Fenuron	118	116	P/P	60 - 150
Fluridone	108	119	P/P	60 - 160
Hydrocodone	109	106	P/P	60 - 150
Ibuprofen	75.6	65.7	P/P	50 - 160
Imazapyr	137	135	P/P	50 - 160
Imidacloprid	101	99.8	P/P	60 - 150
Linuron	113	118	P/P	60 - 150
Mandestrobin	114	113	P/P	50 - 150
MCPP	84.2	93.9	P/P	50 - 150
Naproxen	97.7	116	P/P	50 - 160
Primidone	86.3	99.5	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A110148
Included Lab Sample IDs: 2302276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	111	111	P/P	60 - 150
Silvex	68.1	72.9	P/P	50 - 150
Thiamethoxam	108	110	P/P	50 - 150
Tolfenpyrad	99.3	98.3	P/P	60 - 150
Triclopyr	82.5	71.2	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110154
Included Lab Sample IDs: 2302257, 2302263

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110171
Included Lab Sample IDs: 2302261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110182
Included Lab Sample IDs: 2302261, 2302264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A110183
Included Lab Sample IDs: 2302276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.1	76.2	P/P	60 - 160
AMPA	96.0	95.0	P/P	60 - 160
Endothall	112	90.4	P/P	60 - 160
Glufosinate	92.0	88.9	P/P	60 - 160
Glyphosate	88.7	84.2	P/P	60 - 160
Sucralose	108	78.7	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A110225
Included Lab Sample IDs: 2302257, 2302260, 2302263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	96.4	P/P	90 - 110
Total Alkalinity	98.3	97.5	P/P	90 - 110
Total Alkalinity	99.1	98.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-2011
Run ID: A110225
Included Lab Sample IDs: 2302257, 2302260, 2302263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	101	101	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110239
Included Lab Sample IDs: 2302258, 2302261, 2302264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	98.1	P/P	90 - 110
Kjeldahl Nitrogen	98.1	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110283
Included Lab Sample IDs: 2302258, 2302261, 2302264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110
Total-P	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110313
Included Lab Sample IDs: 2302258

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.9	97.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110370
Included Lab Sample IDs: 2302263

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

Reference Method: SM 5310 B-2011
Run ID: A110410
Included Lab Sample IDs: 2302258

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	98.2	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110436
Included Lab Sample IDs: 2302261, 2302264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	89.8*	91.6	F/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110534
Included Lab Sample IDs: 2302264

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

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	99.2				3.53	
EPA 180.1 Rev. 2.0	Turbidity					3.42	
EPA 300.0 Rev. 2.1	Chloride	102	98.9	98.7		0.524	
	Sulfate	100	98.7	95.6		1.02	
	Sulfate	99.1	96.9	96.3		0.240	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	102	102			0.0
	Ammonia-N	93.6	97.4	100			2.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.5	102	96.7			4.02
	Kjeldahl Nitrogen	103	101	101			0.0340
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.4	99.8			0.349
	NO2NO3-N	100	100	100			0.0
	NO2NO3-N	101	101	100			0.995
EPA 365.1 Rev. 2.0	Total-P	102	98.9	100			1.16
	Total-P	98.2	102	102			0.263
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	97.4	98.3			0.920
	O-Phosphate-P	99.2	99.7	100			0.558
EPA 8321B	2,4-D	89.2	148	149			0.393
	2,4,5-T	75.5	102	114			11.7
	Acesulfame K	75.4	111	114			3.32
	Acetaminophen	96.0	125	134			7.07
	Acetamiprid	98.2	106	90.2			15.9
	Afidopyropen	71.9	58.6	51.0			14.0
	AMPA	104	90.2	101			11.1
	Bentazon	105					1.54
	Benzovindiflupyr	93.1	92.0	94.0			2.22
	Carbamazepine	99.5					1.98
	Clothianidin	106	150	150			0.548
	Dinotefuran	105	146	146			0.243
	Diuron	92.4	88.9	84.5			5.16
	Endothall	97.4	145	157			8.15
	Fenuron	111	89.8	92.5			2.99
	Fluridone	97.5	106	102			2.46
	Glufosinate	92.0	91.2	89.6			1.73
	Glyphosate	87.3	70.5	77.8			9.89
	Hydrocodone	115	120	120			0.721
	Ibuprofen	79.1	71.8	77.6			7.74
	Imazapyr	149					5.54
	Imidacloprid	91.8					1.01
	Linuron	84.1	76.3	78.5			2.84
	Mandestrobin	99.1	97.2	98.3			1.10
	MCPP	108	138	142			2.78
	Naproxen	98.5	89.4	106			16.5
	Primidone	99.4	133	121			5.78
	Pyraclostrobin	92.4	94.0	97.3			3.49
	Silvex	69.8	102	111			8.67
	Sucralose	95.1	107	112			4.04
	Thiamethoxam	96.0	159	159			0.436
	Tolfenpyrad	52.0	54.7	58.9			7.51
	Triclopyr	75.5	110	120			8.70
SM 2320 B-2011	Total Alkalinity	97.3				0.585	
	Total Alkalinity	98.6				0.518	
	Total Alkalinity	99.6				1.34	
SM 2540 C-2011	TDS					0.930	
	TDS					3.68	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 4500 F-C-2011	Fluoride	98.2	98.2	97.6			0.484
	Fluoride	97.7	99.2	98.5			0.480
	Fluoride	98.2	97.7	98.3			0.480
SM 5310 B-2011	Organic Carbon	94.2	97.1	97.8			0.442
	Organic Carbon	95.1	89.8	90.8			0.953

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2302257, 2302263
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2302257, 2302260, 2302263
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2302257, 2302263
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2302257, 2302263
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2302258, 2302261, 2302264
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2302258, 2302261, 2302264
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2302258, 2302261, 2302264
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2302258, 2302261, 2302264
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2302259, 2302262, 2302265
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2302276
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2302257, 2302260, 2302263
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2302257, 2302263
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2302257, 2302260, 2302263
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2302257, 2302260, 2302263
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2302258, 2302261, 2302264

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	01/27/2022			01/28/2022 15:10	Blanca Fach	2302257
	01/27/2022			01/28/2022 15:11	Blanca Fach	2302263
EPA 180.1 Rev. 2.0	01/27/2022			01/28/2022 16:17	Khloe J Berg	2302257, 2302260, 2302263
EPA 300.0 Rev. 2.1	01/27/2022			02/04/2022 03:22	James L Waggerby	2302257
	01/27/2022			02/04/2022 03:34	James L Waggerby	2302263
	01/27/2022			02/11/2022 14:19	James L Waggerby	2302263
EPA 350.1 Rev. 2.0	01/27/2022			02/02/2022 14:18	Ping Hua	2302261
	01/27/2022			02/02/2022 14:20	Ping Hua	2302264
	01/27/2022			02/09/2022 12:58	Roberta Tatti	2302258
EPA 351.2 Rev. 2.0	01/27/2022	02/02/2022 10:16	Alexandra J Mattheus	02/04/2022 09:58	Alexandra J Mattheus	2302261
	01/27/2022	02/02/2022 10:16	Alexandra J Mattheus	02/04/2022 09:59	Alexandra J Mattheus	2302264
	01/27/2022	02/02/2022 10:16	Alexandra J Mattheus	02/04/2022 10:22	Alexandra J Mattheus	2302258
EPA 353.2 Rev. 2.0	01/27/2022			02/01/2022 09:31	Beverly Y. Sanders	2302258
	01/27/2022			02/02/2022 10:21	Beverly Y. Sanders	2302261
	01/27/2022			02/22/2022 10:14	Beverly Y. Sanders	2302264
EPA 365.1 Rev. 2.0	01/27/2022	02/01/2022 11:50	Simonne.V. Calhoun	02/08/2022 11:44	Shengyu Ding	2302264
	01/27/2022	02/01/2022 11:50	Simonne.V. Calhoun	02/08/2022 11:50	Shengyu Ding	2302261
	01/27/2022	02/01/2022 11:50	Simonne.V. Calhoun	02/08/2022 12:03	Shengyu Ding	2302258
EPA 365.1 Rev. 2.0 dissolved	01/27/2022			01/28/2022 15:03	James L Waggerby	2302259
	01/27/2022			01/28/2022 15:24	James L Waggerby	2302262
	01/27/2022			01/28/2022 15:25	James L Waggerby	2302265
EPA 8321B	01/27/2022	01/28/2022 14:00	Hoor Shaik	02/01/2022 00:44	Juyoung Kim	2302276
	01/27/2022	02/01/2022 09:00	Manjita Shrestha	02/01/2022 12:58	Manjita Shrestha	2302276
	01/27/2022	02/01/2022 09:00	Manjita Shrestha	02/02/2022 00:37	Manjita Shrestha	2302276
SM 2320 B-2011	01/27/2022			02/03/2022 20:43	Dale L. Simmons	2302257
	01/27/2022			02/04/2022 02:22	Dale L. Simmons	2302263
	01/27/2022			02/04/2022 05:03	Dale L. Simmons	2302260
SM 2540 C-2011	01/27/2022			02/01/2022 14:37	Yijie Li	2302257
	01/27/2022			02/16/2022 15:36	Yijie Li	2302263
SM 2540 D-2011	01/27/2022			02/01/2022 14:37	Yijie Li	2302257, 2302260, 2302263
SM 4500 F-C-2011	01/27/2022			02/03/2022 20:43	Dale L. Simmons	2302257
	01/27/2022			02/04/2022 02:22	Dale L. Simmons	2302263
	01/27/2022			02/04/2022 03:56	Dale L. Simmons	2302260
SM 5310 B-2011	01/27/2022			02/14/2022 23:23	Khloe J Berg	2302258
	01/27/2022			02/15/2022 17:57	Khloe J Berg	2302261
	01/27/2022			02/15/2022 18:44	Khloe J Berg	2302264