

Chemical Analysis Report

WQAP-2022-12-06-02

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

Event Description: **Hurricane Ian Post Storm Monitoring - CEN ROC**
Request ID: **RQ-2022-11-21-14**
Customer: **WQAP**
Project ID: **HURR-IAN**

Send Reports to:
FL Dept. of Environmental Protection
3319 Maguire Blvd, Suite 232
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Certified by: Colin Wright, Program Administrator

Date Certified: 15-DEC-2022 09:57

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

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: ST JOHNS RIVER AT HWY 40 NEAR ASTOR

Collection Date/Time: 12/05/2022 13:05

Field ID: 3515

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373085	DEP SOP: NU-094-1	Color (true)	250		PCU	P423171	
	EPA 120.1	Specific_Conductance	419	A	umhos/cm	P423460	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P423177	
	EPA 300.0 Rev. 2.1	Chloride	85		mg Cl/L	P423343	
		Sulfate	15		mg SO4/L	P423345	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P423430	
	SM 2540 D-2015	TSS	2	I	mg/L	P423455	
	SM 4500-F- C-2011	Fluoride	0.093	I	mg F/L	P423461	
2373086	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P423183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P423184	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P423204	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P423219	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P423261	
2373103	EPA 8321B	2,4-D	0.013		ug/L	P423132	
		Acesulfame K	0.10	U	ug/L	P423135	
		2,4,5-T	0.0040	U	ug/L	P423132	
		AMPA	0.11	I	ug/L	P423135	
		Acetaminophen	0.0080	U	ug/L	P423132	
		Acetamiprid	0.0020	U	ug/L	P423132	
		Endothall	0.25	U	ug/L	P423135	
		Glufosinate	0.10	U	ug/L	P423135	
		Glyphosate	0.10	U	ug/L	P423135	
		Afidopyropen	0.0020	U	ug/L	P423132	
		Bentazon	0.012		ug/L	P423132	
		Sucralose	0.70		ug/L	P423135	
		Benzovindiflupyr	0.0020	U	ug/L	P423132	
		Carbamazepine	8.0E-04	U	ug/L	P423132	
		Clothianidin	0.0020	U	ug/L	P423132	
		Dinotefuran	0.0020	U	ug/L	P423132	
		Diuron	0.0020	U	ug/L	P423132	
		Fenuron	0.032	U	ug/L	P423132	
		Fluridone	0.0029	I	ug/L	P423132	
		Imazapyr	0.053		ug/L	P423132	
		Hydrocodone	0.0020	U	ug/L	P423132	
		Ibuprofen	0.20	U	ug/L	P423132	
		Imidacloprid	0.0053	I	ug/L	P423132	
		Linuron	0.0040	U	ug/L	P423132	
		Mandestrobin	0.0020	U	ug/L	P423132	
		MCP	0.0040	U	ug/L	P423132	
		Naproxen	0.0080	U	ug/L	P423132	
		Primidone	0.0040	U	ug/L	P423132	
		Pyraclostrobin	0.0020	U	ug/L	P423132	
		Silvex	0.0040	U	ug/L	P423132	
		Thiamethoxam	0.0020	U	ug/L	P423132	

Field ID: 3515

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373103	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P423132	
		Triclopyr	0.0040	U	ug/L	P423132	
2373105	EPA 200.7 Rev. 4.4	Calcium	23.6		mg/L	P423191	
		Magnesium	6.71		mg/L	P423191	
		Potassium	3.4		mg/L	P423191	
		Sodium	44.3		mg/L	P423191	
	SM 2340 B-2011	Hardness	86.6		mg/L	P423191	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: FB

Collection Date/Time: 12/05/2022 13:20

Field ID: FB_12052022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373087	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P423171	
	EPA 120.1	Specific_Conductance	2.0	U	umhos/cm	P423460	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P423177	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P423343	
		Sulfate	0.20	U	mg SO4/L	P423345	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P423430	
	SM 2540 D-2015	TSS	2	U	mg/L	P423455	
2373088	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P423461	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P423183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P423184	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423204	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P423219	
2373104	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P423261	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P423248	
		Acesulfame K	0.10	U	ug/L	P423135	
		2,4,5-T	0.0040	U	ug/L	P423248	
		AMPA	0.10	U	ug/L	P423135	
		Acetaminophen	0.0080	U	ug/L	P423248	
		Acetamiprid	0.0020	U	ug/L	P423248	
		Endothall	0.25	U	ug/L	P423135	
		Glufosinate	0.10	U	ug/L	P423135	
		Glyphosate	0.10	U	ug/L	P423135	
		Afidopyropen	0.0020	U	ug/L	P423248	
		Bentazon	8.0E-04	U	ug/L	P423248	
		Sucralose	0.010	U	ug/L	P423135	
		Benzovindiflupyr	0.0020	U	ug/L	P423248	
		Carbamazepine	8.0E-04	U	ug/L	P423248	
		Clothianidin	0.0020	U	ug/L	P423248	
		Dinotefuran	0.0020	U	ug/L	P423248	
		Diuron	0.0020	U	ug/L	P423248	
		Fenuron	0.032	U	ug/L	P423248	
		Fluridone	8.0E-04	U	ug/L	P423248	
		Imazapyr	0.0040	U	ug/L	P423248	
		Hydrocodone	0.0020	U	ug/L	P423248	
		Ibuprofen	0.20	U	ug/L	P423248	
		Imidacloprid	0.0020	U	ug/L	P423248	
		Linuron	0.0040	U	ug/L	P423248	
		Mandestrobin	0.0020	U	ug/L	P423248	
		MCPP	0.0040	U	ug/L	P423248	
		Naproxen	0.0080	U	ug/L	P423248	
		Primidone	0.0040	U	ug/L	P423248	
		Pyraclostrobin	0.0020	U	ug/L	P423248	
		Silvex	0.0040	U	ug/L	P423248	
		Thiamethoxam	0.0020	U	ug/L	P423248	

Field ID: FB_12052022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373104	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P423248	
		Triclopyr	0.0040	U	ug/L	P423248	
2373106	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P423191	
		Magnesium	0.040	U	mg/L	P423191	
		Potassium	0.30	U	mg/L	P423191	
		Sodium	0.50	U	mg/L	P423191	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P423191	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P423171

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 120.1
Batch ID: P423460

Component	Result	Code	Units
Specific_Conductance	2.0	U	umhos/cm

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423177

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423191

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423343

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423345

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423184

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423204

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P423219

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

Reference Method: EPA 8321B

Batch ID: P423132

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.20	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
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: P423135

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

Reference Method: EPA 8321B

Batch ID: P423248

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P423248

Component	Result	Code	Units
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.20	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P423430

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

Reference Method: SM 2540 D-2015

Batch ID: P423455

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P423461

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P423261

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: P423171

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

Reference Method: EPA 120.1
Batch ID: P423460

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423177

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423191

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	80 - 120
Magnesium	97.6		P	80 - 120
Potassium	96.2		P	80 - 120
Sodium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423343

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423345

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423204

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P423219

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

Reference Method: EPA 8321B

Batch ID: P423132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	91.9		P	40 - 150
2,4,5-T	83.1		P	40 - 150
Acetaminophen	87.5		P	30 - 150
Acetamiprid	87.1		P	40 - 150
Afidopyropen	65.5		P	30 - 150
Bentazon	94.6		P	30 - 150
Benzovindiflupyr	83.1		P	40 - 150
Carbamazepine	89.2		P	40 - 150
Clothianidin	104		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	77.9		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	89.9		P	40 - 150
Hydrocodone	96.8		P	40 - 150
Ibuprofen	87.3		P	40 - 150
Imazapyr	88.1		P	40 - 150
Imidacloprid	91.1		P	40 - 150
Linuron	65.8		P	40 - 150
Mandestrobin	96.9		P	40 - 150
MCPP	81.7		P	40 - 150
Naproxen	62.8		P	40 - 150
Primidone	95.2		P	40 - 150
Pyraclostrobin	85.3		P	40 - 150
Silvex	88.6		P	40 - 150
Thiamethoxam	102		P	40 - 150
Tolfenpyrad	45.7		P	30 - 150
Triclopyr	79.8		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P423135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.2		P	40 - 150
AMPA	108		P	40 - 150
Endothall	97.1		P	40 - 150
Glufosinate	96.0		P	40 - 150
Glyphosate	97.3		P	40 - 150
Sucralose	124		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P423248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.9		P	40 - 150
2,4,5-T	64.7		P	40 - 150
Acetaminophen	81.6		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P423248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetamiprid	87.5		P	40 - 150
Afidopyropen	78.1		P	30 - 150
Bentazon	96.6		P	30 - 150
Benzovindiflupyr	83.1		P	40 - 150
Carbamazepine	83.1		P	40 - 150
Clothianidin	89.7		P	40 - 150
Dinotefuran	98.8		P	40 - 150
Diuron	71.2		P	40 - 150
Fenuron	93.3		P	40 - 150
Fluridone	84.4		P	40 - 150
Hydrocodone	96.3		P	40 - 150
Ibuprofen	76.9		P	40 - 150
Imazapyr	81.6		P	40 - 150
Imidacloprid	87.7		P	40 - 150
Linuron	80.0		P	40 - 150
Mandestrobin	90.9		P	40 - 150
MCPP	82.1		P	40 - 150
Naproxen	97.6		P	40 - 150
Primidone	91.8		P	40 - 150
Pyraclostrobin	73.8		P	40 - 150
Silvex	79.3		P	40 - 150
Thiamethoxam	97.9		P	40 - 150
Tolfenpyrad	36.9		P	30 - 150
Triclopyr	72.8		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P423430

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.6		P	94 - 106

Reference Method: SM 2540 D-2015

Batch ID: P423455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P423461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011

Batch ID: P423261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372764	Calcium	90.3	94.2	P/P	80 - 120
2372764	Magnesium	93.8	94.5	P/P	80 - 120
2372764	Potassium	94.0	95.0	P/P	80 - 120
2372764	Sodium	98.1	99.7	P/P	80 - 120
2372895	Calcium	98.9		P	80 - 120
2372895	Magnesium	97.0		P	80 - 120
2372895	Potassium	96.2		P	80 - 120
2372895	Sodium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372194	Chloride	99.7		P	90 - 110
2372326	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372194	Sulfate	97.2		P	90 - 110
2372326	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370886	Ammonia-N	96.6	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372597	Kjeldahl Nitrogen	102	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372695	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373061	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P423132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372700	2,4,5-T	84.3	72.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P423132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372700	Acetaminophen	93.1	86.5	P/P	30 - 150
2372700	Acetamiprid	88.6	83.8	P/P	40 - 150
2372700	Afidopyropen	67.7	62.2	P/P	30 - 150
2372700	Bentazon	77.5	74.9	P/P	30 - 150
2372700	Benzovindiflupyr	77.3	81.1	P/P	40 - 150
2372700	Carbamazepine	76.0	70.0	P/P	40 - 150
2372700	Clothianidin	109	106	P/P	40 - 150
2372700	Dinotefuran	118	107	P/P	40 - 150
2372700	Diuron	58.7	56.3	P/P	40 - 150
2372700	Fenuron	91.9	87.6	P/P	40 - 150
2372700	Fluridone	82.3	77.0	P/P	40 - 150
2372700	Hydrocodone	107	98.8	P/P	40 - 150
2372700	Ibuprofen	68.7	62.5	P/P	40 - 150
2372700	Imazapyr	112	108	P/P	40 - 150
2372700	Imidacloprid	132	131	P/P	40 - 150
2372700	Linuron	71.8	62.5	P/P	40 - 150
2372700	Mandestrobin	88.7	85.9	P/P	40 - 150
2372700	MCPP	91.7	80.7	P/P	40 - 150
2372700	Naproxen	77.5	70.8	P/P	40 - 150
2372700	Primidone	102	93.3	P/P	40 - 150
2372700	Pyraclostrobin	81.2	80.1	P/P	40 - 150
2372700	Silvex	90.2	100	P/P	40 - 150
2372700	Thiamethoxam	133	120	P/P	40 - 150
2372700	Tolfenpyrad	49.9	46.1	P/P	30 - 150
2372700	Triclopyr	87.3	82.7	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P423135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372700	Acesulfame K	92.1	77.3	P/P	40 - 150
2372700	AMPA	106	97.3	P/P	40 - 150
2372700	Endothall	98.9	97.2	P/P	40 - 150
2372700	Glufosinate	101	103	P/P	40 - 150
2372700	Glyphosate	94.8	98.8	P/P	40 - 150
2372700	Sucralose	114	126	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P423248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373230	2,4-D	90.4	93.1	P/P	40 - 150
2373230	2,4,5-T	79.6	73.4	P/P	40 - 150
2373230	Acetaminophen	91.7	96.8	P/P	30 - 150
2373230	Acetamiprid	70.2	70.7	P/P	40 - 150
2373230	Afidopyropen	63.3	54.1	P/P	30 - 150
2373230	Benzovindiflupyr	73.8	78.9	P/P	40 - 150
2373230	Carbamazepine	60.9	64.6	P/P	40 - 150
2373230	Clothianidin	98.2	101	P/P	40 - 150
2373230	Dinotefuran	94.3	101	P/P	40 - 150
2373230	Diuron	54.8	55.9	P/P	40 - 150
2373230	Fenuron	67.8	72.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P423248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373230	Fluridone	71.9	81.5	P/P	40 - 150
2373230	Hydrocodone	81.6	87.1	P/P	40 - 150
2373230	Ibuprofen	67.5	61.1	P/P	40 - 150
2373230	Imidacloprid	132	142	P/P	40 - 150
2373230	Linuron	58.5	71.4	P/P	40 - 150
2373230	Mandestrobin	83.4	87.3	P/P	40 - 150
2373230	MCCPP	79.4	77.8	P/P	40 - 150
2373230	Naproxen	71.5	70.1	P/P	40 - 150
2373230	Primidone	82.5	86.9	P/P	40 - 150
2373230	Pyraclostrobin	77.8	81.3	P/P	40 - 150
2373230	Silvex	89.7	92.8	P/P	40 - 150
2373230	Thiamethoxam	109	114	P/P	40 - 150
2373230	Tolfenpyrad	47.2	44.9	P/P	30 - 150
2373230	Triclopyr	68.0	80.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P423461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373085	Fluoride	97.4	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372162	Organic Carbon	97.6	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P423171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372923	Color (true)	1.03	Sample	P	0 - 20

Reference Method: EPA 120.1
Batch ID: P423460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373085	Specific_Conductance	0.477	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372927	Turbidity	7.65	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372764	Calcium	2.01	Spike	P	0 - 20
2372764	Magnesium	0.722	Spike	P	0 - 20
2372764	Potassium	0.919	Spike	P	0 - 20
2372764	Sodium	1.42	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372194	Chloride	0.347	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372194	Sulfate	0.544	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370886	Ammonia-N	0.908	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P423184

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372597	Kjeldahl Nitrogen	3.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P423204

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372695	NO2NO3-N	0.272	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P423219

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373061	Total-P	0.675	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P423132

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372700	2,4-D	1.01	Spike	P	0 - 30
2372700	2,4,5-T	14.7	Spike	P	0 - 30
2372700	Acetaminophen	7.35	Spike	P	0 - 30
2372700	Acetamiprid	5.61	Spike	P	0 - 30
2372700	Afidopyropen	8.47	Spike	P	0 - 30
2372700	Bentazon	3.36	Spike	P	0 - 30
2372700	Benzovindiflupyr	4.78	Spike	P	0 - 30
2372700	Carbamazepine	8.21	Spike	P	0 - 30
2372700	Clothianidin	2.62	Spike	P	0 - 30
2372700	Dinotefuran	9.66	Spike	P	0 - 30
2372700	Diuron	4.19	Spike	P	0 - 30
2372700	Fenuron	4.78	Spike	P	0 - 30
2372700	Fluridone	6.68	Spike	P	0 - 30
2372700	Hydrocodone	7.97	Spike	P	0 - 30
2372700	Ibuprofen	9.54	Spike	P	0 - 30
2372700	Imazapyr	3.02	Spike	P	0 - 30
2372700	Imidacloprid	1.36	Spike	P	0 - 30
2372700	Linuron	13.9	Spike	P	0 - 30
2372700	Mandestrobin	3.21	Spike	P	0 - 30
2372700	MCP	12.8	Spike	P	0 - 30
2372700	Naproxen	8.93	Spike	P	0 - 30
2372700	Primidone	8.84	Spike	P	0 - 30
2372700	Pyraclostrobin	1.31	Spike	P	0 - 30
2372700	Silvex	10.8	Spike	P	0 - 30
2372700	Thiamethoxam	10.3	Spike	P	0 - 30
2372700	Tolfenpyrad	7.83	Spike	P	0 - 30
2372700	Triclopyr	5.36	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P423135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372700	Acesulfame K	17.5	Spike	P	0 - 30
2372700	AMPA	8.21	Spike	P	0 - 30
2372700	Endothall	1.75	Spike	P	0 - 30
2372700	Glufosinate	1.82	Spike	P	0 - 30
2372700	Glyphosate	4.11	Spike	P	0 - 30
2372700	Sucralose	8.49	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P423248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373230	2,4-D	1.91	Spike	P	0 - 30
2373230	2,4,5-T	8.10	Spike	P	0 - 30
2373230	Acetaminophen	5.44	Spike	P	0 - 30
2373230	Acetamiprid	0.790	Spike	P	0 - 30
2373230	Afidopyropen	15.7	Spike	P	0 - 30
2373230	Bentazon	2.27	Spike	P	0 - 30
2373230	Benzovindiflupyr	6.72	Spike	P	0 - 30
2373230	Carbamazepine	5.83	Spike	P	0 - 30
2373230	Clothianidin	2.80	Spike	P	0 - 30
2373230	Dinotefuran	7.31	Spike	P	0 - 30
2373230	Diuron	1.92	Spike	P	0 - 30
2373230	Fenuron	6.21	Spike	P	0 - 30
2373230	Fluridone	10.6	Spike	P	0 - 30
2373230	Hydrocodone	6.52	Spike	P	0 - 30
2373230	Ibuprofen	9.91	Spike	P	0 - 30
2373230	Imazapyr	9.08	Spike	P	0 - 30
2373230	Imidacloprid	7.04	Spike	P	0 - 30
2373230	Linuron	19.9	Spike	P	0 - 30
2373230	Mandestrobin	4.57	Spike	P	0 - 30
2373230	MCPP	2.04	Spike	P	0 - 30
2373230	Naproxen	1.90	Spike	P	0 - 30
2373230	Primidone	5.20	Spike	P	0 - 30
2373230	Pyraclostrobin	4.38	Spike	P	0 - 30
2373230	Silvex	3.46	Spike	P	0 - 30
2373230	Thiamethoxam	4.39	Spike	P	0 - 30
2373230	Tolfenpyrad	5.16	Spike	P	0 - 30
2373230	Triclopyr	16.4	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P423430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372105	Total Alkalinity	0.0847	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P423461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373085	Fluoride	1.00	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372162	Organic Carbon	0.143	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2373103

Field Sample ID: 3515

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.2	P	30 - 160
EPA 8321B	Diuron-d6	47.4	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.5	P	30 - 160
EPA 8321B	Primidone-d5	84.8	P	30 - 160
EPA 8321B	Sucralose-d6	81.4	P	30 - 160

Lab Sample ID: 2373104

Field Sample ID: FB_12052022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.7	P	30 - 160
EPA 8321B	Diuron-d6	65.9	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.9	P	30 - 160
EPA 8321B	Primidone-d5	83.8	P	30 - 160
EPA 8321B	Sucralose-d6	80.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116272

Included Lab Sample IDs: 2373085, 2373087

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

Reference Method: DEP SOP: NU-094-1

Run ID: A116283

Included Lab Sample IDs: 2373085, 2373087

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116285

Included Lab Sample IDs: 2373085, 2373087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116287

Included Lab Sample IDs: 2373086, 2373088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116302

Included Lab Sample IDs: 2373086, 2373088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116319

Included Lab Sample IDs: 2373086

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116322

Included Lab Sample IDs: 2373086, 2373088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116326

Included Lab Sample IDs: 2373103, 2373104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.7	84.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116326

Included Lab Sample IDs: 2373103, 2373104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	107	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116329

Included Lab Sample IDs: 2373088

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

Reference Method: EPA 8321B

Run ID: A116332

Included Lab Sample IDs: 2373103, 2373104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.7	103	P/P	60 - 160
Endothall	102	107	P/P	60 - 160
Glufosinate	100	91.1	P/P	60 - 160
Glyphosate	100	98.6	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116333

Included Lab Sample IDs: 2373086, 2373088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.7	97.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116396

Included Lab Sample IDs: 2373085, 2373087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.7	91.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116397

Included Lab Sample IDs: 2373103, 2373104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	105	P/P	50 - 150
2,4-D	105	102	P/P	50 - 150
2,4,5-T	114	95.0	P/P	50 - 150
2,4,5-T	95.0	92.3	P/P	50 - 150
Acetaminophen	85.9	90.7	P/P	60 - 160
Acetaminophen	88.7	85.9	P/P	60 - 160
Acetamiprid	101	99.7	P/P	50 - 150
Acetamiprid	104	101	P/P	50 - 150
Afidopyropen	109	109	P/P	50 - 150
Afidopyropen	109	122	P/P	50 - 150
Bentazon	107	95.7	P/P	50 - 160
Bentazon	95.7	109	P/P	50 - 160
Benzovindiflupyr	96.5	99.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116397

Included Lab Sample IDs: 2373103, 2373104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	97.7	96.5	P/P	50 - 150
Carbamazepine	102	103	P/P	60 - 150
Carbamazepine	103	103	P/P	60 - 150
Clothianidin	93.2	95.8	P/P	60 - 150
Clothianidin	97.4	93.2	P/P	60 - 150
Dinotefuran	104	106	P/P	50 - 150
Dinotefuran	106	106	P/P	50 - 150
Diuron	103	108	P/P	60 - 160
Diuron	108	95.5	P/P	60 - 160
Fenuron	101	101	P/P	60 - 150
Fenuron	103	101	P/P	60 - 150
Fluridone	102	97.1	P/P	60 - 160
Fluridone	97.1	93.8	P/P	60 - 160
Hydrocodone	107	105	P/P	60 - 150
Hydrocodone	108	107	P/P	60 - 150
Ibuprofen	109	114	P/P	50 - 160
Ibuprofen	80.8	109	P/P	50 - 160
Imazapyr	97.8	107	P/P	50 - 150
Imazapyr	98.3	97.8	P/P	50 - 150
Imidacloprid	100	97.2	P/P	60 - 150
Imidacloprid	96.2	100	P/P	60 - 150
Linuron	80.8	90.6	P/P	60 - 150
Linuron	90.6	88.5	P/P	60 - 150
Mandestrobin	102	106	P/P	50 - 150
Mandestrobin	105	102	P/P	50 - 150
MCPP	85.8	97.3	P/P	50 - 150
MCPP	97.3	94.4	P/P	50 - 150
Naproxen	108	95.9	P/P	50 - 160
Naproxen	111	108	P/P	50 - 160
Primidone	106	103	P/P	60 - 150
Primidone	98.5	106	P/P	60 - 150
Pyraclostrobin	106	102	P/P	60 - 150
Pyraclostrobin	107	106	P/P	60 - 150
Silvex	109	93.2	P/P	50 - 150
Silvex	115	109	P/P	50 - 150
Thiamethoxam	100	106	P/P	50 - 150
Thiamethoxam	107	100	P/P	50 - 150
Tolfenpyrad	102	99.5	P/P	60 - 150
Tolfenpyrad	104	102	P/P	60 - 150
Triclopyr	116	106	P/P	50 - 150
Triclopyr	90.5	116	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116406

Included Lab Sample IDs: 2373105, 2373106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.7	P/P	90 - 110
Magnesium	98.3	98.0	P/P	90 - 110
Potassium	96.4	96.3	P/P	90 - 110
Sodium	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 120.1

Run ID: A116408

Included Lab Sample IDs: 2373085, 2373087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Specific_Conductance	101	100	P/P	85 - 115

Reference Method: SM 4500-F- C-2011

Run ID: A116408

Included Lab Sample IDs: 2373085, 2373087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	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	MS
							SMP	
DEP SOP: NU-094-1	Color (true)	102					1.03	
EPA 120.1	Specific_Conductance	100					0.477	
EPA 180.1 Rev. 2.0	Turbidity	101					7.65	
EPA 200.7 Rev. 4.4	Calcium	101	94.2	98.9	90.3			2.01
	Magnesium	97.6	93.8	94.5	97.0			0.722
	Potassium	96.2	94.0	95.0	96.2			0.919
	Sodium	101	98.1	99.7	101			1.42
EPA 300.0 Rev. 2.1	Chloride	98.6	99.7	99.9			0.347	
	Sulfate	98.1	97.2	98.9			0.544	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.6	97.6				0.908
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.7	102	97.0				3.30
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	100				0.272
EPA 365.1 Rev. 2.0	Total-P	104	104	105				0.675
EPA 8321B	2,4-D	91.9						1.01
	2,4-D	90.9	90.4	93.1				1.91
	2,4,5-T	83.1	84.3	72.7				14.7
	2,4,5-T	64.7	79.6	73.4				8.10
	Acesulfame K	79.2	92.1	77.3				17.5
	Acetaminophen	87.5	93.1	86.5				7.35
	Acetaminophen	81.6	91.7	96.8				5.44
	Acetamiprid	87.1	88.6	83.8				5.61
	Acetamiprid	87.5	70.2	70.7				0.790
	Afidopyropen	65.5	67.7	62.2				8.47
	Afidopyropen	78.1	63.3	54.1				15.7
	AMPA	108	106	97.3				8.21
	Bentazon	94.6	77.5	74.9				3.36
	Bentazon	96.6						2.27
	Benzovindiflupyr	83.1	77.3	81.1				4.78
	Benzovindiflupyr	83.1	73.8	78.9				6.72
	Carbamazepine	89.2	76.0	70.0				8.21
	Carbamazepine	83.1	60.9	64.6				5.83
	Clothianidin	104	109	106				2.62
	Clothianidin	89.7	98.2	101				2.80
	Dinotefuran	104	118	107				9.66
	Dinotefuran	98.8	94.3	101				7.31
	Diuron	77.9	58.7	56.3				4.19
	Diuron	71.2	54.8	55.9				1.92
	Endothall	97.1	98.9	97.2				1.75
	Fenuron	112	91.9	87.6				4.78
	Fenuron	93.3	67.8	72.1				6.21
	Fluridone	89.9	82.3	77.0				6.68
	Fluridone	84.4	71.9	81.5				10.6
	Glufosinate	96.0	101	103				1.82
	Glyphosate	97.3	94.8	98.8				4.11
	Hydrocodone	96.8	107	98.8				7.97
	Hydrocodone	96.3	81.6	87.1				6.52
	Ibuprofen	87.3	68.7	62.5				9.54
	Ibuprofen	76.9	67.5	61.1				9.91
	Imazapyr	88.1	112	108				3.02
	Imazapyr	81.6						9.08
	Imidacloprid	91.1	132	131				1.36
	Imidacloprid	87.7	132	142				7.04
	Linuron	65.8	71.8	62.5				13.9
	Linuron	80.0	58.5	71.4				19.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Mandestrobin	96.9	88.7	85.9		3.21
	Mandestrobin	90.9	83.4	87.3		4.57
	MCPP	81.7	91.7	80.7		12.8
	MCPP	82.1	79.4	77.8		2.04
	Naproxen	62.8	77.5	70.8		8.93
	Naproxen	97.6	71.5	70.1		1.90
	Primidone	95.2	102	93.3		8.84
	Primidone	91.8	82.5	86.9		5.20
	Pyraclostrobin	85.3	81.2	80.1		1.31
	Pyraclostrobin	73.8	77.8	81.3		4.38
	Silvex	88.6	90.2	100		10.8
	Silvex	79.3	89.7	92.8		3.46
	Sucralose	124	114	126		8.49
	Thiamethoxam	102	133	120		10.3
	Thiamethoxam	97.9	109	114		4.39
	Tolfenpyrad	45.7	49.9	46.1		7.83
	Tolfenpyrad	36.9	47.2	44.9		5.16
	Triclopyr	79.8	87.3	82.7		5.36
	Triclopyr	72.8	68.0	80.2		16.4
SM 2320 B-2011	Total Alkalinity	96.6				0.0847
SM 2540 D-2015	TSS	101				
SM 4500-F- C-2011	Fluoride	102	97.4	98.6		1.00
SM 5310 B-2011	Organic Carbon	94.0	97.6	97.9		0.143

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2373085, 2373087
EPA 120.1	Specific Conductivity in aqueous matrices (umhos/cm at 25 deg C).	2373085, 2373087
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2373085, 2373087
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2373105, 2373106
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2373085, 2373087
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2373085, 2373087
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2373086, 2373088
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2373086, 2373088
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2373086, 2373088
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2373086, 2373088
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2373103, 2373104
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2373085, 2373087
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2373105, 2373106
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2373085, 2373087
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2373085, 2373087
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2373086, 2373088

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	12/06/2022			12/06/2022 14:46	Chandler E Cox	2373085
	12/06/2022			12/06/2022 14:47	Chandler E Cox	2373087
EPA 120.1	12/06/2022			12/13/2022 15:01	Adam P Silver	2373085
	12/06/2022			12/13/2022 15:15	Adam P Silver	2373087
EPA 180.1 Rev. 2.0	12/06/2022			12/06/2022 14:49	Anna M. Plaviak	2373085
	12/06/2022			12/06/2022 14:50	Anna M. Plaviak	2373087
EPA 200.7 Rev. 4.4	12/06/2022	12/07/2022 10:10	Vijayalakshmi Reddy	12/13/2022 14:55	McKinley C Carter	2373105
	12/06/2022	12/07/2022 10:10	Vijayalakshmi Reddy	12/13/2022 15:01	McKinley C Carter	2373106
EPA 300.0 Rev. 2.1	12/06/2022			12/08/2022 21:48	Anna M. Plaviak	2373085
	12/06/2022			12/08/2022 22:03	Anna M. Plaviak	2373087
EPA 350.1 Rev. 2.0	12/06/2022			12/06/2022 16:40	Judith K. Clark	2373086
	12/06/2022			12/06/2022 16:42	Judith K. Clark	2373088
EPA 351.2 Rev. 2.0	12/06/2022	12/07/2022 09:56	Samantha L Bates	12/08/2022 11:23	Samantha L Bates	2373086
	12/06/2022	12/07/2022 09:56	Samantha L Bates	12/08/2022 11:25	Samantha L Bates	2373088
EPA 353.2 Rev. 2.0	12/06/2022			12/07/2022 09:26	Beverly Y. Sanders	2373086
	12/06/2022			12/07/2022 09:27	Beverly Y. Sanders	2373088
EPA 365.1 Rev. 2.0	12/06/2022	12/07/2022 13:30	Adam P Silver	12/08/2022 10:51	James L Waggeberby	2373086
	12/06/2022	12/07/2022 13:30	Adam P Silver	12/08/2022 13:16	Simonne.V. Calhoun	2373088
EPA 8321B	12/06/2022	12/07/2022 08:00	Umesh Chiluwal	12/07/2022 11:44	Umesh Chiluwal	2373103
	12/06/2022	12/07/2022 08:00	Umesh Chiluwal	12/07/2022 11:57	Umesh Chiluwal	2373104
	12/06/2022	12/07/2022 08:00	Umesh Chiluwal	12/08/2022 02:13	Umesh Chiluwal	2373103
	12/06/2022	12/07/2022 08:00	Umesh Chiluwal	12/08/2022 02:28	Umesh Chiluwal	2373104
	12/06/2022	12/07/2022 11:00	June Rhew	12/12/2022 23:57	Juyoung Kim	2373103
	12/06/2022	12/09/2022 09:30	June Rhew	12/13/2022 02:08	Juyoung Kim	2373104
SM 2320 B-2011	12/06/2022			12/13/2022 02:03	Dale L. Simmons	2373085
	12/06/2022			12/13/2022 02:09	Dale L. Simmons	2373087
SM 2340 B-2011	12/06/2022			12/13/2022 14:55	McKinley C Carter	2373105
	12/06/2022			12/13/2022 15:01	McKinley C Carter	2373106
SM 2540 D-2015	12/06/2022			12/08/2022 15:34	Yijie Li	2373085, 2373087
SM 4500-F- C-2011	12/06/2022			12/13/2022 14:59	Adam P Silver	2373085
	12/06/2022			12/13/2022 15:15	Adam P Silver	2373087
SM 5310 B-2011	12/06/2022			12/07/2022 22:57	Elise M. Gillis	2373086
	12/06/2022			12/07/2022 23:11	Elise M. Gillis	2373088