

Chemical Analysis Report

WQAP-2022-11-29-03

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
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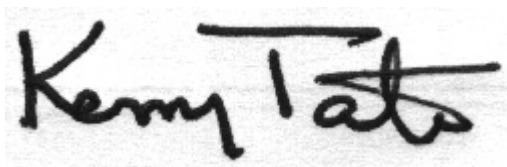
Event Description: **Hurricane Ian Post Storm Monitoring - SE ROC**
Request ID: **RQ-2022-11-28-20**
Customer: **WQAP**
Project ID: **HURR-IAN**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 08-DEC-2022 12:55

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: S-65 Downstream

Collection Date/Time: 11/28/2022 10:45

Field ID: 59629

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371398	DEP SOP: NU-094-1	Color (true)	170		PCU	P422872	
	EPA 120.1	Specific_Conductance	125		umhos/cm	P422960	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P422877	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P423093	
		Sulfate	5.7		mg SO4/L	P423096	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P422961	
	SM 2540 D-2015	TSS	4	I	mg/L	P423165	
2371399	SM 4500-F- C-2011	Fluoride	0.074	I	mg F/L	P422964	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P422913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P423023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P422907	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P422981	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P423056	
	EPA 8321B	2,4-D	0.0037	I	ug/L	P422936	
2371403		Acesulfame K	0.10	U	ug/L	P422875	
		2,4,5-T	0.0040	U	ug/L	P422936	
		AMPA	0.10	U	ug/L	P422875	
		Acetaminophen	0.0080	U	ug/L	P422936	
		Acetamiprid	0.0020	U	ug/L	P422936	
		Endothall	0.25	U	ug/L	P422875	
		Glufosinate	0.10	U	ug/L	P422875	
		Glyphosate	0.10	U	ug/L	P422875	
		Afidopyropen	0.0020	U	ug/L	P422936	
		Bentazon	0.020		ug/L	P422936	
		Sucralose	0.41		ug/L	P422875	
		Benzovindiflupyr	0.0020	U	ug/L	P422936	
		Carbamazepine	8.0E-04	U	ug/L	P422936	
		Clothianidin	0.0020	U	ug/L	P422936	
		Dinotefuran	0.0020	U	ug/L	P422936	
		Diuron	0.0020	U	ug/L	P422936	
		Fenuron	0.032	U	ug/L	P422936	
		Fluridone	0.010		ug/L	P422936	
		Imazapyr	0.23		ug/L	P422936	
		Hydrocodone	0.0020	U	ug/L	P422936	
		Ibuprofen	0.20	U	ug/L	P422936	
		Imidacloprid	0.0076	I	ug/L	P422936	
		Linuron	0.0040	U	ug/L	P422936	
		Mandestrobin	0.0020	U	ug/L	P422936	
		MCPP	0.0040	U	ug/L	P422936	
		Naproxen	0.0080	U	ug/L	P422936	
		Primidone	0.0040	U	ug/L	P422936	
		Pyraclostrobin	0.0020	U	ug/L	P422936	
		Silvex	0.0040	U	ug/L	P422936	
		Thiamethoxam	0.0020	U	ug/L	P422936	

Field ID: 59629

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371403	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P422936	
		Triclopyr	0.0040	U	ug/L	P422936	
2371404	EPA 200.7 Rev. 4.4	Calcium	9.84		mg/L	P422920	
		Magnesium	2.62		mg/L	P422920	
		Potassium	2.8		mg/L	P422920	
		Sodium	9.9		mg/L	P422920	
		Hardness	35.4		mg/L	P422920	
	SM 2340 B-2011						

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

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

SM 4500-F- C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P422872

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 120.1
Batch ID: P422960

Component	Result	Code	Units
Specific_Conductance	2.0	U	umhos/cm

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422877

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422920

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: P423093

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423096

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422907

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: P422981

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

Reference Method: EPA 8321B
Batch ID: P422875

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: P422936

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: SM 2320 B-2011
Batch ID: P422961

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P423165

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P423056

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: P422872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	90 - 110

Reference Method: EPA 120.1
Batch ID: P422960

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422877

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Magnesium	99.4		P	85 - 115
Potassium	99.0		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423093

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423096

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	109		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422907

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P422981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P422875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	108		P	40 - 150
AMPA	90.0		P	40 - 150
Endothall	85.5		P	40 - 150
Glufosinate	80.1		P	40 - 150
Glyphosate	100		P	40 - 150
Sucralose	97.3		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P422936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.2		P	40 - 150
2,4,5-T	84.0		P	40 - 150
Acetaminophen	81.3		P	30 - 150
Acetamiprid	83.5		P	40 - 150
Afidopyropen	67.9		P	30 - 150
Bentazon	91.8		P	30 - 150
Benzovindiflupyr	81.1		P	40 - 150
Carbamazepine	92.4		P	40 - 150
Clothianidin	97.5		P	40 - 150
Dinotefuran	84.4		P	40 - 150
Diuron	81.0		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	99.3		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	95.6		P	40 - 150
Imazapyr	83.1		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	78.0		P	40 - 150
Mandestrobin	90.7		P	40 - 150
MCPP	90.4		P	40 - 150
Naproxen	92.0		P	40 - 150
Primidone	90.8		P	40 - 150
Pyraclostrobin	85.0		P	40 - 150
Silvex	84.4		P	40 - 150
Thiamethoxam	92.3		P	40 - 150
Tolfenpyrad	45.7		P	30 - 150
Triclopyr	88.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P422961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.4		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P423165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	88.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

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

Reference Method: SM 5310 B-2011
Batch ID: P423056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371116	Calcium	106		P	80 - 120
2371116	Magnesium	106		P	80 - 120
2371116	Sodium	104		P	80 - 120
2371151	Calcium	111		P	80 - 120
2371151	Magnesium	107		P	80 - 120
2371151	Potassium	103		P	80 - 120
2371151	Sodium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370281	Chloride	103		P	90 - 110
2370668	Chloride	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370281	Sulfate	102		P	90 - 110
2370668	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367750	Ammonia-N	98.8	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371399	Kjeldahl Nitrogen	109	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371320	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371330	Total-P	110	109	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P422875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371390	Acesulfame K	59.4	56.4	P/P	40 - 150
2371390	AMPA	81.4	76.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P422875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371390	Endothall	62.1	67.7	P/P	40 - 150
2371390	Glufosinate	76.2	77.2	P/P	40 - 150
2371390	Glyphosate	95.7	98.0	P/P	40 - 150
2371390	Sucralose	88.7	89.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371586	2,4-D	83.6	82.0	P/P	40 - 150
2371586	2,4,5-T	81.4	83.8	P/P	40 - 150
2371586	Acetaminophen	83.4	92.0	P/P	30 - 150
2371586	Acetamiprid	77.0	76.7	P/P	40 - 150
2371586	Afidopyropen	59.8	60.9	P/P	30 - 150
2371586	Bentazon	97.0	103	P/P	30 - 150
2371586	Benzovindiflupyr	79.9	92.6	P/P	40 - 150
2371586	Carbamazepine	91.5	103	P/P	40 - 150
2371586	Clothianidin	99.9	105	P/P	40 - 150
2371586	Dinotefuran	90.9	97.6	P/P	40 - 150
2371586	Diuron	78.3	83.0	P/P	40 - 150
2371586	Fenuron	100	110	P/P	40 - 150
2371586	Fluridone	88.1	98.8	P/P	40 - 150
2371586	Hydrocodone	93.3	96.1	P/P	40 - 150
2371586	Ibuprofen	84.1	71.9	P/P	40 - 150
2371586	Imazapyr	81.2	88.9	P/P	40 - 150
2371586	Imidacloprid	122	130	P/P	40 - 150
2371586	Linuron	71.9	75.2	P/P	40 - 150
2371586	Mandestrobin	88.2	88.4	P/P	40 - 150
2371586	MCPP	94.1	94.3	P/P	40 - 150
2371586	Naproxen	82.6	78.0	P/P	40 - 150
2371586	Primidone	85.2	93.9	P/P	40 - 150
2371586	Pyraclostrobin	86.3	92.2	P/P	40 - 150
2371586	Silvex	86.7	92.6	P/P	40 - 150
2371586	Thiamethoxam	103	109	P/P	40 - 150
2371586	Tolfenpyrad	52.8	57.7	P/P	30 - 150
2371586	Triclopyr	83.2	84.1	P/P	40 - 150

Reference Method: SM 5310 B-2011
Batch ID: P423056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371318	Organic Carbon	96.4	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 120.1

Batch ID: P422960

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371108	Specific_Conductance	0.871	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P422877

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371374	Turbidity	0.897	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P422920

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371116	Calcium	2.78	Spike	P	0 - 20
2371116	Magnesium	0.419	Spike	P	0 - 20
2371116	Potassium	2.56	Spike	P	0 - 20
2371116	Sodium	2.39	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423093

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370281	Chloride	0.130	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423096

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370281	Sulfate	0.0943	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P422913

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367750	Ammonia-N	0.735	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P423023

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371399	Kjeldahl Nitrogen	6.79	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371320	NO2NO3-N	0.335	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371330	Total-P	0.273	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P422875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371390	Acesulfame K	5.22	Spike	P	0 - 30
2371390	AMPA	4.31	Spike	P	0 - 30
2371390	Endothall	8.58	Spike	P	0 - 30
2371390	Glufosinate	1.20	Spike	P	0 - 30
2371390	Glyphosate	1.99	Spike	P	0 - 30
2371390	Sucralose	1.19	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P422936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371586	2,4-D	1.95	Spike	P	0 - 30
2371586	2,4,5-T	2.81	Spike	P	0 - 30
2371586	Acetaminophen	9.79	Spike	P	0 - 30
2371586	Acetamiprid	0.400	Spike	P	0 - 30
2371586	Afidopyropen	1.82	Spike	P	0 - 30
2371586	Bentazon	6.41	Spike	P	0 - 30
2371586	Benzovindiflupyr	14.7	Spike	P	0 - 30
2371586	Carbamazepine	12.3	Spike	P	0 - 30
2371586	Clothianidin	5.16	Spike	P	0 - 30
2371586	Dinotefuran	7.02	Spike	P	0 - 30
2371586	Diuron	5.76	Spike	P	0 - 30
2371586	Fenuron	9.40	Spike	P	0 - 30
2371586	Fluridone	11.4	Spike	P	0 - 30
2371586	Hydrocodone	2.97	Spike	P	0 - 30
2371586	Ibuprofen	15.6	Spike	P	0 - 30
2371586	Imazapyr	9.05	Spike	P	0 - 30
2371586	Imidacloprid	6.47	Spike	P	0 - 30
2371586	Linuron	4.53	Spike	P	0 - 30
2371586	Mandestrobin	0.190	Spike	P	0 - 30
2371586	MCPP	0.176	Spike	P	0 - 30
2371586	Naproxen	5.66	Spike	P	0 - 30
2371586	Primidone	9.76	Spike	P	0 - 30
2371586	Pyraclostrobin	6.59	Spike	P	0 - 30
2371586	Silvex	6.61	Spike	P	0 - 30
2371586	Thiamethoxam	5.56	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P422936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371586	Tolfenpyrad	8.85	Spike	P	0 - 30
2371586	Triclopyr	1.11	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P422961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371108	Total Alkalinity	1.13	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371108	Fluoride	0.986	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371318	Organic Carbon	1.36	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2371403

Field Sample ID: 59629

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.6	P	30 - 160
EPA 8321B	Diuron-d6	56.1	P	30 - 160
EPA 8321B	Endothall-d6	60.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.0	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A116168
Included Lab Sample IDs: 2371398

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A116171
Included Lab Sample IDs: 2371398

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: A116183
Included Lab Sample IDs: 2371399

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A116189
Included Lab Sample IDs: 2371399

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A116199
Included Lab Sample IDs: 2371404

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	110	P/P	90 - 110
Magnesium	104	108	P/P	90 - 110
Potassium	101	105	P/P	90 - 110
Sodium	103	108	P/P	90 - 110

Reference Method: EPA 120.1
Run ID: A116202
Included Lab Sample IDs: 2371398

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Specific_Conductance	101	102	P/P	85 - 115

Reference Method: SM 2320 B-2011
Run ID: A116202
Included Lab Sample IDs: 2371398

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A116202

Included Lab Sample IDs: 2371398

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

Reference Method: EPA 8321B

Run ID: A116218

Included Lab Sample IDs: 2371403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	110	122	P/P	60 - 160
Sucralose	99.6	94.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116223

Included Lab Sample IDs: 2371403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.3	97.6	P/P	60 - 160
Endothall	80.4	62.6	P/P	60 - 160
Glufosinate	74.1	73.0	P/P	60 - 160
Glyphosate	97.7	103	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116227

Included Lab Sample IDs: 2371399

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

Reference Method: SM 5310 B-2011

Run ID: A116243

Included Lab Sample IDs: 2371399

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116252

Included Lab Sample IDs: 2371403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.4	97.2	P/P	50 - 150
2,4,5-T	96.3	99.0	P/P	50 - 150
Acetaminophen	91.3	87.0	P/P	60 - 160
Acetamiprid	103	104	P/P	50 - 150
Afidopyropen	102	102	P/P	50 - 150
Bentazon	98.6	111	P/P	50 - 160
Benzovindiflupyr	104	104	P/P	50 - 150
Carbamazepine	109	107	P/P	60 - 150
Clothianidin	104	101	P/P	60 - 150
Dinotefuran	95.9	93.0	P/P	50 - 150
Diuron	110	109	P/P	60 - 160
Fenuron	104	100	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A116252
Included Lab Sample IDs: 2371403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	110	105	P/P	60 - 160
Hydrocodone	86.9	93.2	P/P	60 - 150
Ibuprofen	87.8	123	P/P	50 - 160
Imazapyr	96.3	91.0	P/P	50 - 150
Imidacloprid	105	102	P/P	60 - 150
Linuron	108	98.0	P/P	60 - 150
Mandestrobin	110	104	P/P	50 - 150
MCP	100	89.6	P/P	50 - 150
Naproxen	104	139	P/P	50 - 160
Primidone	90.0	92.8	P/P	60 - 150
Pyraclostrobin	107	108	P/P	60 - 150
Silvex	95.5	98.7	P/P	50 - 150
Thiamethoxam	99.7	104	P/P	50 - 150
Tolfenpyrad	99.2	99.2	P/P	60 - 150
Triclopyr	103	108	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A116259
Included Lab Sample IDs: 2371398

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	103	P/P	90 - 110
Sulfate	105	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A116263
Included Lab Sample IDs: 2371399

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	96.0	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)	98.8					
EPA 120.1	Specific_Conductance	101				0.871	
EPA 180.1 Rev. 2.0	Turbidity	102				0.897	
EPA 200.7 Rev. 4.4	Calcium	103	106	111			2.78
	Magnesium	99.4	106	107			0.419
	Potassium	99.0	103				2.56
	Sodium	101	104	106			2.39
EPA 300.0 Rev. 2.1	Chloride	103	103	108		0.130	
	Sulfate	109	102	107		0.0943	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.8	99.8			0.735
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	109	99.8			6.79
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.335
EPA 365.1 Rev. 2.0	Total-P	106	110	109			0.273
EPA 8321B	2,4-D	89.2	83.6	82.0			1.95
	2,4,5-T	84.0	83.8	81.4			2.81
	Acesulfame K	108	59.4	56.4			5.22
	Acetaminophen	81.3	83.4	92.0			9.79
	Acetamiprid	83.5	77.0	76.7			0.400
	Afidopyropen	67.9	59.8	60.9			1.82
	AMPA	90.0	81.4	76.5			4.31
	Bentazon	91.8	97.0	103			6.41
	Benzovindiflupyr	81.1	79.9	92.6			14.7
	Carbamazepine	92.4	91.5	103			12.3
	Clothianidin	97.5	99.9	105			5.16
	Dinotefuran	84.4	90.9	97.6			7.02
	Diuron	81.0	78.3	83.0			5.76
	Endothall	85.5	62.1	67.7			8.58
	Fenuron	106	100	110			9.40
	Fluridone	99.3	88.1	98.8			11.4
	Glufosinate	80.1	76.2	77.2			1.20
	Glyphosate	100	95.7	98.0			1.99
	Hydrocodone	98.2	93.3	96.1			2.97
	Ibuprofen	95.6	71.9	84.1			15.6
	Imazapyr	83.1	81.2	88.9			9.05
	Imidacloprid	101	122	130			6.47
	Linuron	78.0	71.9	75.2			4.53
	Mandestrobin	90.7	88.2	88.4			0.190
	MCPP	90.4	94.1	94.3			0.176
	Naproxen	92.0	78.0	82.6			5.66
	Primidone	90.8	85.2	93.9			9.76
	Pyraclostrobin	85.0	86.3	92.2			6.59
	Silvex	84.4	92.6	86.7			6.61
	Sucralose	97.3	88.7	89.9			1.19
	Thiamethoxam	92.3	103	109			5.56
	Tolfenpyrad	45.7	52.8	57.7			8.85
	Triclopyr	88.0	83.2	84.1			1.11
SM 2320 B-2011	Total Alkalinity	96.4				1.13	
SM 2540 D-2015	TSS	88.1					
SM 4500-F- C-2011	Fluoride	101					0.986
SM 5310 B-2011	Organic Carbon	95.2	96.4	95.0			1.36

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2371398
EPA 120.1	Specific Conductivity in aqueous matrices (umhos/cm at 25 deg C).	2371398
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2371398
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2371404
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2371398
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2371398
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2371399
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2371399
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2371399
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2371399
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2371403
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2371398
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2371404
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2371398
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2371398
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2371399

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	11/29/2022			11/29/2022 14:37	Chandler E Cox	2371398
EPA 120.1	11/29/2022			11/30/2022 21:37	Dale L. Simmons	2371398
EPA 180.1 Rev. 2.0	11/29/2022			11/29/2022 13:41	Chandler E Cox	2371398
EPA 200.7 Rev. 4.4	11/29/2022	11/30/2022 11:30	Vijayalakshmi Reddy	12/01/2022 01:04	McKinley C Carter	2371404
EPA 300.0 Rev. 2.1	11/29/2022			12/02/2022 14:54	James L Waggeberby	2371398
EPA 350.1 Rev. 2.0	11/29/2022			11/29/2022 13:33	Ping Hua	2371399
EPA 351.2 Rev. 2.0	11/29/2022	12/02/2022 13:20	Simonne.V. Calhoun	12/05/2022 13:36	Judith K. Clark	2371399
EPA 353.2 Rev. 2.0	11/29/2022			11/30/2022 09:22	Beverly Y. Sanders	2371399
EPA 365.1 Rev. 2.0	11/29/2022	12/01/2022 13:57	Adam P Silver	12/02/2022 10:17	James L Waggeberby	2371399
EPA 8321B	11/29/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 10:13	Manjita Shrestha	2371403
	11/29/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 18:34	Manjita Shrestha	2371403
	11/29/2022	12/02/2022 09:30	June Rhew	12/02/2022 17:12	Juyoung Kim	2371403
SM 2320 B-2011	11/29/2022			11/30/2022 21:37	Dale L. Simmons	2371398
SM 2340 B-2011	11/29/2022			12/01/2022 01:04	McKinley C Carter	2371404
SM 2540 D-2015	11/29/2022			12/01/2022 15:43	Yijie Li	2371398
SM 4500-F- C-2011	11/29/2022			11/30/2022 21:37	Dale L. Simmons	2371398
SM 5310 B-2011	11/29/2022			11/30/2022 22:44	Khloe J Berg	2371399