

Chemical Analysis Report

SW-DIST-2022-08-03-01

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

Event Description: **2022 Run 11**
Request ID: **RQ-2022-08-01-17**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 22-AUG-2022 10:29

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" in "Tate".

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: Hollin Creek @ Cypress Run Golf Club

Collection Date/Time: 08/02/2022 09:50

Field ID: G5SW0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2345585	EPA 8321B	2,4-D	0.0020	U	ug/L	P417606	
		Acesulfame K	0.10	U	ug/L	P417520	
		2,4,5-T	0.0040	U	ug/L	P417606	
		AMPA	0.17	I	ug/L	P417520	
		Acetaminophen	0.0080	U	ug/L	P417606	
		Acetamiprid	0.0020	U	ug/L	P417606	
		Endothall	0.25	U	ug/L	P417520	
		Glufosinate	0.10	U	ug/L	P417520	
		Glyphosate	0.18	I	ug/L	P417520	
		Afidopyropen	0.0020	U	ug/L	P417606	
		Bentazon	0.046		ug/L	P417606	
		Sucralose	0.036	I	ug/L	P417520	
		Benzovindiflupyr	0.0020	U	ug/L	P417606	
		Carbamazepine	8.0E-04	U	ug/L	P417606	
		Clothianidin	0.0047	I	ug/L	P417606	
		Dinotefuran	0.0020	U	ug/L	P417606	
		Diuron	0.010		ug/L	P417606	
		Fenuron	0.032	U	ug/L	P417606	
		Fluridone	0.034		ug/L	P417606	
		Imazapyr	0.41		ug/L	P417606	
		Hydrocodone	0.0020	U	ug/L	P417606	
		Ibuprofen	0.080	U	ug/L	P417606	
		Imidacloprid	0.0088		ug/L	P417606	
		Linuron	0.0040	U	ug/L	P417606	
		Mandestrobin	0.0020	U	ug/L	P417606	
		MCPP	0.0040	U	ug/L	P417606	
		Naproxen	0.0080	U	ug/L	P417606	
		Primidone	0.0040	U	ug/L	P417606	
		Pyraclostrobin	0.0020	U	ug/L	P417606	
		Silvex	0.0040	U	ug/L	P417606	
		Thiamethoxam	0.0020	U	ug/L	P417606	
		Tolfenpyrad	0.0020	U	ug/L	P417606	
		Triclopyr	0.0040	U	ug/L	P417606	

Ref. Method and Comment:

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

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

Sample Location: Lake Hanna Outlet @ Hanna Road

Collection Date/Time: 08/02/2022 11:45

Field ID: G2SW0142

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2345573	DEP SOP: NU-094-1	Color (true)	43	A	PCU	P417583	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P417588	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P417883	
		Sulfate	4.0		mg SO4/L	P417888	
	SM 2320 B-2011	Total Alkalinity	36		mg CaCO3/L	P418117	
	SM 2540 C-2011	TDS	131		mg/L	P417987	
	SM 2540 D-2011	TSS	2	I	mg/L	P418066	
	SM 4500-F- C-2011	Fluoride	0.094	I	mg F/L	P417950	
2345575	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P417773	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P417714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P417718	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P417785	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P417763	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Hanna Outlet @ Livingston Ave

Collection Date/Time: 08/02/2022 12:00

Field ID: G2SW0143

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2345574	DEP SOP: NU-094-1	Color (true)	46		PCU	P417583	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P417588	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P417883	
		Sulfate	8.2		mg SO4/L	P417888	
	SM 2320 B-2011	Total Alkalinity	115		mg CaCO3/L	P418117	
	SM 2540 C-2011	TDS	239		mg/L	P417987	
	SM 2540 D-2011	TSS	2	I	mg/L	P418066	
	SM 4500-F- C-2011	Fluoride	0.061	I	mg F/L	P417948	
2345576	EPA 350.1 Rev. 2.0	Ammonia-N	2.8		mg N/L	P417776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.2		mg N/L	P417714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.53		mg N/L	P417719	
	EPA 365.1 Rev. 2.0	Total-P	0.61		mg P/L	P417785	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P417763	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P417583

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417588

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417883

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417888

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417773

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417714

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417718

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417719

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: P417785

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

Reference Method: EPA 8321B

Batch ID: P417520

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: P417606

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	0.080	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: P418117

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P417987

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418066

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417948

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417950

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417763

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: P417583

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417588

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417883

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417888

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417773

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417785

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

Reference Method: EPA 8321B

Batch ID: P417520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.6		P	40 - 150
AMPA	111		P	40 - 150
Endothall	90.8		P	40 - 150
Glufosinate	111		P	40 - 150
Glyphosate	110		P	40 - 150
Sucralose	113		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P417606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 150
2,4,5-T	100		P	40 - 150
Acetaminophen	34.6		P	30 - 150
Acetamiprid	88.1		P	40 - 150
Afidopyropen	76.3		P	30 - 150
Bentazon	102		P	30 - 150
Benzovindiflupyr	94.5		P	40 - 150
Carbamazepine	101		P	40 - 150
Clothianidin	98.8		P	40 - 150
Dinotefuran	102		P	40 - 150
Diuron	89.5		P	40 - 150
Fenuron	96.6		P	40 - 150
Fluridone	100		P	40 - 150
Hydrocodone	96.5		P	40 - 150
Ibuprofen	87.3		P	40 - 150
Imazapyr	114		P	40 - 150
Imidacloprid	106		P	40 - 150
Linuron	88.6		P	40 - 150
Mandestrobin	97.8		P	40 - 150
MCPP	106		P	40 - 150
Naproxen	73.4		P	40 - 150
Primidone	98.5		P	40 - 150
Pyraclostrobin	90.1		P	40 - 150
Silvex	97.5		P	40 - 150
Thiamethoxam	104		P	40 - 150
Tolfenpyrad	54.1		P	30 - 150
Triclopyr	85.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P418117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P417948

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P417950

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

Reference Method: SM 5310 B-2011
Batch ID: P417763

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345590	Chloride	94.8		P	90 - 110
2345594	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345590	Sulfate	97.3		P	90 - 110
2345594	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345596	Ammonia-N	96.2	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345595	Ammonia-N	98.2	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345419	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345698	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345575	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P417520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345138	Acesulfame K	82.1	84.5	P/P	40 - 150
2345138	AMPA	45.2	43.7	P/P	40 - 150
2345138	Endothall	94.2	97.1	P/P	40 - 150
2345138	Glufosinate	50.5	48.2	P/P	40 - 150
2345138	Glyphosate	64.2	68.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P417606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345138	2,4-D	86.4	81.9	P/P	40 - 150
2345138	2,4,5-T	72.1	70.0	P/P	40 - 150
2345138	Acetaminophen	34.7	40.0	P/P	30 - 150
2345138	Acetamiprid	75.5	86.4	P/P	40 - 150
2345138	Afidopyropen	85.9	92.4	P/P	30 - 150
2345138	Benzovindiflupyr	94.4	96.5	P/P	40 - 150
2345138	Clothianidin	105	90.5	P/P	40 - 150
2345138	Diuron	72.0	80.8	P/P	40 - 150
2345138	Fenuron	88.1	86.2	P/P	40 - 150
2345138	Fluridone	101	94.4	P/P	40 - 150
2345138	Hydrocodone	104	99.8	P/P	40 - 150
2345138	Ibuprofen	89.7	96.0	P/P	40 - 150
2345138	Imazapyr	64.5	59.9	P/P	40 - 150
2345138	Linuron	121	124	P/P	40 - 150
2345138	Mandestrobin	94.8	92.2	P/P	40 - 150
2345138	MCPP	88.0	81.3	P/P	40 - 150
2345138	Naproxen	53.4	65.6	P/P	40 - 150
2345138	Pyraclostrobin	94.0	92.0	P/P	40 - 150
2345138	Silvex	98.1	90.4	P/P	40 - 150
2345138	Thiamethoxam	134	141	P/P	40 - 150
2345138	Tolfenpyrad	59.7	56.4	P/P	30 - 150
2345138	Triclopyr	75.0	69.9	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P417948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345591	Fluoride	99.6	99.6	P/P	94 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P417950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345573	Fluoride	101	99.7	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P417763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345525	Organic Carbon	95.5	95.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P417583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345573	Color (true)	0.415	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345340	Turbidity	1.54	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345590	Chloride	0.183	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345590	Sulfate	0.164	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345596	Ammonia-N	0.835	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345595	Ammonia-N	0.416	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345205	Kjeldahl Nitrogen	7.72	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345419	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P417719

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345698	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417785

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345575	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P417520

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345138	Acesulfame K	2.96	Spike	P	0 - 30
2345138	AMPA	3.37	Spike	P	0 - 30
2345138	Endothall	3.04	Spike	P	0 - 30
2345138	Glufosinate	4.69	Spike	P	0 - 30
2345138	Glyphosate	6.08	Spike	P	0 - 30
2345138	Sucralose	3.64	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P417606

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345138	2,4-D	4.33	Spike	P	0 - 30
2345138	2,4,5-T	2.92	Spike	P	0 - 30
2345138	Acetaminophen	14.3	Spike	P	0 - 30
2345138	Acetamiprid	11.8	Spike	P	0 - 30
2345138	Afidopyropen	7.31	Spike	P	0 - 30
2345138	Bentazon	8.17	Spike	P	0 - 30
2345138	Benzovindiflupyr	2.26	Spike	P	0 - 30
2345138	Carbamazepine	0.0370	Spike	P	0 - 30
2345138	Clothianidin	10.3	Spike	P	0 - 30
2345138	Dinotefuran	2.10	Spike	P	0 - 30
2345138	Diuron	7.73	Spike	P	0 - 30
2345138	Fenuron	2.16	Spike	P	0 - 30
2345138	Fluridone	5.98	Spike	P	0 - 30
2345138	Hydrocodone	4.05	Spike	P	0 - 30
2345138	Ibuprofen	6.79	Spike	P	0 - 30
2345138	Imazapyr	4.66	Spike	P	0 - 30
2345138	Imidacloprid	3.20	Spike	P	0 - 30
2345138	Linuron	2.34	Spike	P	0 - 30
2345138	Mandestrobin	2.84	Spike	P	0 - 30
2345138	MCPP	7.82	Spike	P	0 - 30
2345138	Naproxen	20.5	Spike	P	0 - 30
2345138	Primidone	3.82	Spike	P	0 - 30
2345138	Pyraclostrobin	2.08	Spike	P	0 - 30
2345138	Silvex	8.17	Spike	P	0 - 30
2345138	Thiamethoxam	5.22	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P417606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345138	Tolfenpyrad	5.75	Spike	P	0 - 30
2345138	Triclopyr	7.03	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P418117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345591	Total Alkalinity	2.76	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P417987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345524	TDS	3.71	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P418066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345524	TSS	6.45	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345591	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P417950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345573	Fluoride	0.969	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345525	Organic Carbon	0.229	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2345585

Field Sample ID: G5SW0186

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	44.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	82.3	P	30 - 160
EPA 8321B	Endothall-d6	137	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.9	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A113881

Included Lab Sample IDs: 2345573, 2345574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113882

Included Lab Sample IDs: 2345573, 2345574

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

Reference Method: EPA 8321B

Run ID: A113922

Included Lab Sample IDs: 2345585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.5	95.1	P/P	50 - 150
2,4,5-T	94.3	100	P/P	50 - 150
Acetaminophen	101	98.0	P/P	60 - 160
Acetamiprid	88.1	100	P/P	50 - 150
Afidopyropen	91.4	96.3	P/P	50 - 150
Bentazon	99.3	93.6	P/P	50 - 160
Benzovindiflupyr	98.4	95.1	P/P	50 - 150
Carbamazepine	104	110	P/P	60 - 150
Clothianidin	108	96.3	P/P	60 - 150
Dinotefuran	102	101	P/P	50 - 150
Diuron	112	96.9	P/P	60 - 160
Fenuron	98.3	96.3	P/P	60 - 150
Fluridone	112	104	P/P	60 - 160
Hydrocodone	101	101	P/P	60 - 150
Ibuprofen	78.2	74.7	P/P	50 - 160
Imazapyr	110	115	P/P	50 - 150
Imidacloprid	99.1	94.7	P/P	60 - 150
Linuron	95.6	88.5	P/P	60 - 150
Mandestrobin	105	99.9	P/P	50 - 150
MCPP	104	97.5	P/P	50 - 150
Naproxen	68.4	75.2	P/P	50 - 160
Primidone	96.4	104	P/P	60 - 150
Pyraclostrobin	102	103	P/P	60 - 150
Silvex	89.1	87.7	P/P	50 - 150
Thiamethoxam	102	100	P/P	50 - 150
Tolfenpyrad	96.4	95.9	P/P	60 - 150
Triclopyr	78.8	81.1	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113931

Included Lab Sample IDs: 2345575, 2345576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113947
Included Lab Sample IDs: 2345585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.3	102	P/P	60 - 160
Sucralose	116	114	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A113950
Included Lab Sample IDs: 2345585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	124	123	P/P	60 - 160
Endothall	96.2	91.8	P/P	60 - 160
Glufosinate	117	103	P/P	60 - 160
Glyphosate	110	117	P/P	60 - 160

Reference Method: SM 5310 B-2011
Run ID: A113961
Included Lab Sample IDs: 2345575, 2345576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.3	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113967
Included Lab Sample IDs: 2345575, 2345576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	99.3	P/P	90 - 110
Ammonia-N	99.4	99.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114002
Included Lab Sample IDs: 2345573, 2345574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.8	P/P	90 - 110
Chloride	102	100	P/P	90 - 110
Sulfate	101	98.9	P/P	90 - 110
Sulfate	98.9	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A114014
Included Lab Sample IDs: 2345576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A114020
Included Lab Sample IDs: 2345573, 2345574

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A114020

Included Lab Sample IDs: 2345573, 2345574

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114026

Included Lab Sample IDs: 2345575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114046

Included Lab Sample IDs: 2345575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	94.7	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114102

Included Lab Sample IDs: 2345573, 2345574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114104

Included Lab Sample IDs: 2345576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.6	91.9	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	MS
DEP SOP: NU-094-1	Color (true)	102			0.415	
EPA 180.1 Rev. 2.0	Turbidity	96.4			1.54	
EPA 300.0 Rev. 2.1	Chloride	102	94.8	97.8	0.183	
	Sulfate	99.6	97.3	99.1	0.164	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	96.2	95.4		0.835
	Ammonia-N	95.4	98.2	97.6		0.416
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.9				7.72
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.5	99.5		0.0
	NO2NO3-N	99.0	100	100		0.499
EPA 365.1 Rev. 2.0	Total-P	103	103	104		1.76
EPA 8321B	2,4-D	101	86.4	81.9		4.33
	2,4,5-T	100	72.1	70.0		2.92
	Acesulfame K	99.6	82.1	84.5		2.96
	Acetaminophen	34.6	34.7	40.0		14.3
	Acetamiprid	88.1	75.5	86.4		11.8
	Afidopyropen	76.3	85.9	92.4		7.31
	AMPA	111	45.2	43.7		3.37
	Bentazon	102				8.17
	Benzovindiflupyr	94.5	94.4	96.5		2.26
	Carbamazepine	101				0.0370
	Clothianidin	98.8	105	90.5		10.3
	Dinotefuran	102				2.10
	Diuron	89.5	72.0	80.8		7.73
	Endothall	90.8	94.2	97.1		3.04
	Fenuron	96.6	88.1	86.2		2.16
	Fluridone	100	101	94.4		5.98
	Glufosinate	111	50.5	48.2		4.69
	Glyphosate	110	64.2	68.3		6.08
	Hydrocodone	96.5	104	99.8		4.05
	Ibuprofen	87.3	89.7	96.0		6.79
	Imazapyr	114	64.5	59.9		4.66
	Imidacloprid	106				3.20
	Linuron	88.6	121	124		2.34
	Mandestrobin	97.8	94.8	92.2		2.84
	MCPP	106	88.0	81.3		7.82
	Naproxen	73.4	53.4	65.6		20.5
	Primidone	98.5				3.82
	Pyraclostrobin	90.1	94.0	92.0		2.08
	Silvex	97.5	98.1	90.4		8.17
	Sucralose	113				3.64
	Thiamethoxam	104	134	141		5.22
	Tolfenpyrad	54.1	59.7	56.4		5.75
	Triclopyr	85.0	75.0	69.9		7.03
SM 2320 B-2011	Total Alkalinity	99.3			2.76	
SM 2540 C-2011	TDS				3.71	
SM 2540 D-2011	TSS				6.45	
SM 4500-F- C-2011	Fluoride	103	99.6	99.6		0.0
	Fluoride	102	101	99.7		0.969
SM 5310 B-2011	Organic Carbon	97.4	95.5	95.1		0.229

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2345573, 2345574
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2345573, 2345574
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2345573, 2345574
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2345573, 2345574
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2345575, 2345576
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2345575, 2345576
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2345575, 2345576
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2345575, 2345576
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2345585
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2345573, 2345574
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2345573, 2345574
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2345573, 2345574
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2345573, 2345574
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2345575, 2345576

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	08/03/2022			08/03/2022 15:32	Anna M. Plaviak	2345573, 2345574
EPA 180.1 Rev. 2.0	08/03/2022			08/03/2022 14:15	Khloe J Berg	2345573
	08/03/2022			08/03/2022 14:17	Khloe J Berg	2345574
EPA 300.0 Rev. 2.1	08/03/2022			08/09/2022 08:21	Anna M. Plaviak	2345573
	08/03/2022			08/09/2022 08:57	Anna M. Plaviak	2345574
EPA 350.1 Rev. 2.0	08/03/2022			08/08/2022 15:47	Ping Hua	2345575
	08/03/2022			08/08/2022 17:09	Ping Hua	2345576
EPA 351.2 Rev. 2.0	08/03/2022	08/08/2022 14:48	Samantha L Bates	08/11/2022 14:20	Alexandra J Mattheus	2345575
	08/03/2022	08/08/2022 14:48	Samantha L Bates	08/15/2022 10:30	Samantha L Bates	2345576
EPA 353.2 Rev. 2.0	08/03/2022			08/05/2022 09:59	Beverly Y. Sanders	2345575
	08/03/2022			08/05/2022 10:06	Beverly Y. Sanders	2345576
EPA 365.1 Rev. 2.0	08/03/2022	08/09/2022 09:37	Simonne.V. Calhoun	08/10/2022 15:37	James L Waggeberby	2345576
	08/03/2022	08/09/2022 09:37	Simonne.V. Calhoun	08/11/2022 10:18	Simonne.V. Calhoun	2345575
EPA 8321B	08/03/2022	08/04/2022 13:00	Hoor Shaik	08/05/2022 14:29	Juyoung Kim	2345585
	08/03/2022	08/05/2022 09:10	Umesh Chiluwal	08/05/2022 14:14	Umesh Chiluwal	2345585
	08/03/2022	08/05/2022 09:10	Umesh Chiluwal	08/06/2022 06:02	Umesh Chiluwal	2345585
SM 2320 B-2011	08/03/2022			08/13/2022 07:10	Adam P Silver	2345573
	08/03/2022			08/13/2022 07:22	Adam P Silver	2345574
SM 2540 C-2011	08/03/2022			08/05/2022 16:02	Yijie Li	2345573, 2345574
SM 2540 D-2011	08/03/2022			08/05/2022 16:02	Yijie Li	2345573, 2345574
SM 4500-F- C-2011	08/03/2022			08/10/2022 05:40	Adam P Silver	2345574
	08/03/2022			08/10/2022 09:38	Adam P Silver	2345573
SM 5310 B-2011	08/03/2022			08/06/2022 01:43	Khloe J Berg	2345575
	08/03/2022			08/06/2022 01:58	Khloe J Berg	2345576