

Chemical Analysis Report

SO-DIST-2022-08-04-02

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

Event Description: **2022 SMP : Arbuckle**
Request ID: **RQ-2022-08-01-46**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

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

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

Date Certified: 25-AUG-2022 10:01

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: Arbuckle Branch

Collection Date/Time: 08/03/2022 11:35

Field ID: G4SD0172

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346158	DEP SOP: NU-094-1	Color (true)	68		PCU	P417681	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P417670	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P418021	
		Sulfate	25		mg SO4/L	P418026	
	SM 2320 B-2011	Total Alkalinity	4.5		mg CaCO3/L	P418046	
	SM 2540 C-2011	TDS	158		mg/L	P418183	
	SM 2540 D-2011	TSS	2	I	mg/L	P418227	
2346159	SM 4500-F- C-2011	Fluoride	0.044	I	mg F/L	P418050	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P417973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P417798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P417756	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P417793	
2346179	SM 5310 B-2011	Organic Carbon	20		mg C/L	P417814	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P417722	
		Acesulfame K	0.10	U	ug/L	P417605	
		2,4,5-T	0.0040	U	ug/L	P417722	
		AMPA	0.10	U	ug/L	P417605	
		Acetaminophen	0.0080	U	ug/L	P417722	
		Acetamiprid	0.0020	U	ug/L	P417722	
		Endothall	0.25	U	ug/L	P417605	
		Glufosinate	0.10	U	ug/L	P417605	
		Glyphosate	0.10	U	ug/L	P417605	
		Afidopyropen	0.0020	U	ug/L	P417722	
		Bentazon	0.0043		ug/L	P417722	
		Sucralose	0.046		ug/L	P417605	
		Benzovindiflupyr	0.0020	U	ug/L	P417722	
		Carbamazepine	8.0E-04	U	ug/L	P417722	
		Clothianidin	0.0020	U	ug/L	P417722	
		Dinotefuran	0.0020	U	ug/L	P417722	
		Diuron	0.0020	U	ug/L	P417722	
		Fenuron	0.032	U	ug/L	P417722	
		Fluridone	8.0E-04	U	ug/L	P417722	
		Imazapyr	0.0040	U	ug/L	P417722	
		Hydrocodone	0.0020	U	ug/L	P417722	
		Ibuprofen	0.080	U	ug/L	P417722	
		Imidacloprid	0.0020	U	ug/L	P417722	
		Linuron	0.0040	U	ug/L	P417722	
		Mandestrobin	0.0020	U	ug/L	P417722	
		MCPP	0.0040	U	ug/L	P417722	
		Naproxen	0.0080	U	ug/L	P417722	
		Primidone	0.0040	U	ug/L	P417722	
		Pyraclostrobin	0.0020	U	ug/L	P417722	
		Silvex	0.0040	U	ug/L	P417722	
		Thiamethoxam	0.0020	U	ug/L	P417722	MS

Field ID: G4SD0172

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346179	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P417722	
		Triclopyr	0.0040	U	ug/L	P417722	

Sample Location: ArbuckleCreekNearBranch

Collection Date/Time: 08/03/2022 12:35

Field ID: G4SD0210

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346156	DEP SOP: NU-094-1	Color (true)	140		PCU	P417683	
	EPA 180.1 Rev. 2.0	Turbidity	20		NTU	P417670	
	EPA 300.0 Rev. 2.1	Chloride	16	A	mg Cl/L	P418021	
		Sulfate	21	A	mg SO4/L	P418026	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P418046	
	SM 2540 C-2011	TDS	120	A	mg/L	P418183	
	SM 2540 D-2011	TSS	38	A	mg/L	P418227	
	SM 4500-F- C-2011	Fluoride	0.076	I	mg F/L	P418050	
2346157	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P417972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P417860	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P417756	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P417793	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P417814	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P417681

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P417683

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417798

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417756

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417793

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

Reference Method: EPA 8321B
Batch ID: P417605

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: P417722

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P418046

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

Reference Method: SM 2540 C-2011
Batch ID: P418183

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418227

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417814

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: P417681

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P417683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

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: P417798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P417756

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P417605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	119		P	40 - 150
AMPA	146		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	146		P	40 - 150
Glyphosate	134		P	40 - 150
Sucralose	136		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P417722

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	117		P	40 - 150
2,4,5-T	98.8		P	40 - 150
Acetaminophen	82.9		P	30 - 150
Acetamiprid	73.6		P	40 - 150
Afidopyropen	62.7		P	30 - 150
Bentazon	77.9		P	30 - 150
Benzovindiflupyr	92.5		P	40 - 150
Carbamazepine	97.6		P	40 - 150
Clothianidin	110		P	40 - 150
Dinotefuran	108		P	40 - 150
Diuron	95.3		P	40 - 150
Fenuron	98.5		P	40 - 150
Fluridone	99.3		P	40 - 150
Hydrocodone	98.3		P	40 - 150
Ibuprofen	95.4		P	40 - 150
Imazapyr	114		P	40 - 150
Imidacloprid	98.0		P	40 - 150
Linuron	105		P	40 - 150
Mandestrobin	95.1		P	40 - 150
MCPP	107		P	40 - 150
Naproxen	78.4		P	40 - 150
Primidone	109		P	40 - 150
Pyraclostrobin	89.6		P	40 - 150
Silvex	105		P	40 - 150
Thiamethoxam	103		P	40 - 150
Tolfenpyrad	64.6		P	30 - 150
Triclopyr	115		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P418046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346156	Chloride	96.8		P	90 - 110
2346288	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346156	Sulfate	91.9		P	90 - 110
2346288	Sulfate	93.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344791	Ammonia-N	98.0	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346336	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346252	Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346365	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346151	NO2NO3-N	98.2	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346148	Total-P	108	109	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P417605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345974	Acesulfame K	96.6	93.3	P/P	40 - 150
2345974	AMPA	111	110	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P417605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345974	Endothall	94.2	110	P/P	40 - 150
2345974	Glufosinate	90.8	88.8	P/P	40 - 150
2345974	Glyphosate	93.8	92.3	P/P	40 - 150
2345974	Sucralose	111	110	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P417722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346036	2,4-D	89.6	99.1	P/P	40 - 150
2346036	2,4,5-T	59.3	71.4	P/P	40 - 150
2346036	Acetaminophen	70.5	75.1	P/P	30 - 150
2346036	Acetamiprid	57.8	50.4	P/P	40 - 150
2346036	Afidopyropen	67.8	75.3	P/P	30 - 150
2346036	Bentazon	42.1	49.5	P/P	30 - 150
2346036	Benzovindiflupyr	94.0	100	P/P	40 - 150
2346036	Carbamazepine	91.1	95.1	P/P	40 - 150
2346036	Clothianidin	116	110	P/P	40 - 150
2346036	Dinotefuran	135	139	P/P	40 - 150
2346036	Diuron	66.5	68.6	P/P	40 - 150
2346036	Fenuron	79.6	85.5	P/P	40 - 150
2346036	Fluridone	82.7	93.2	P/P	40 - 150
2346036	Hydrocodone	98.3	107	P/P	40 - 150
2346036	Ibuprofen	75.2	85.6	P/P	40 - 150
2346036	Imazapyr	56.9	73.4	P/P	40 - 150
2346036	Imidacloprid	123	133	P/P	40 - 150
2346036	Linuron	89.8	84.6	P/P	40 - 150
2346036	Mandestrobin	83.3	86.3	P/P	40 - 150
2346036	MCCP	77.0	83.9	P/P	40 - 150
2346036	Naproxen	65.1	64.0	P/P	40 - 150
2346036	Primidone	118	105	P/P	40 - 150
2346036	Pyraclostrobin	81.3	91.8	P/P	40 - 150
2346036	Silvex	86.6	79.4	P/P	40 - 150
2346036	Thiamethoxam	143	155	P/F	40 - 150
2346036	Tolfenpyrad	50.9	60.2	P/P	30 - 150
2346036	Triclopyr	88.5	98.9	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P418050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346364	Fluoride	101	99.6	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P417814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346159	Organic Carbon	94.6	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P417681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346146	Color (true)	0.708	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P417683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345933	Color (true)	13.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346247	Turbidity	2.20	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	Chloride	0.269	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	Sulfate	0.0297	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344791	Ammonia-N	0.749	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346336	Ammonia-N	1.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346252	Kjeldahl Nitrogen	1.77	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P417860

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346365	Kjeldahl Nitrogen	0.0512	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P417756

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346151	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417793

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346148	Total-P	0.376	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P417605

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345974	Acesulfame K	3.46	Spike	P	0 - 30
2345974	AMPA	1.26	Spike	P	0 - 30
2345974	Endothall	15.4	Spike	P	0 - 30
2345974	Glufosinate	2.31	Spike	P	0 - 30
2345974	Glyphosate	1.53	Spike	P	0 - 30
2345974	Sucralose	0.576	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P417722

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346036	2,4-D	8.89	Spike	P	0 - 30
2346036	2,4,5-T	18.6	Spike	P	0 - 30
2346036	Acetaminophen	6.26	Spike	P	0 - 30
2346036	Acetamiprid	13.6	Spike	P	0 - 30
2346036	Afidopyropen	10.5	Spike	P	0 - 30
2346036	Bentazon	16.2	Spike	P	0 - 30
2346036	Benzovindiflupyr	6.54	Spike	P	0 - 30
2346036	Carbamazepine	4.28	Spike	P	0 - 30
2346036	Clothianidin	4.88	Spike	P	0 - 30
2346036	Dinotefuran	3.01	Spike	P	0 - 30
2346036	Diuron	3.11	Spike	P	0 - 30
2346036	Fenuron	7.11	Spike	P	0 - 30
2346036	Fluridone	11.9	Spike	P	0 - 30
2346036	Hydrocodone	8.68	Spike	P	0 - 30
2346036	Ibuprofen	12.9	Spike	P	0 - 30
2346036	Imazapyr	18.8	Spike	P	0 - 30
2346036	Imidacloprid	7.63	Spike	P	0 - 30
2346036	Linuron	6.01	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P417722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346036	Mandestrobin	3.54	Spike	P	0 - 30
2346036	MCCP	8.58	Spike	P	0 - 30
2346036	Naproxen	1.80	Spike	P	0 - 30
2346036	Primidone	11.7	Spike	P	0 - 30
2346036	Pyraclostrobin	12.1	Spike	P	0 - 30
2346036	Silvex	8.60	Spike	P	0 - 30
2346036	Thiamethoxam	7.99	Spike	P	0 - 30
2346036	Tolfenpyrad	16.7	Spike	P	0 - 30
2346036	Triclopyr	11.1	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P418046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346364	Total Alkalinity	1.24	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P418183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	TDS	4.15	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P418227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	TSS	7.41	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346364	Fluoride	0.953	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346159	Organic Carbon	0.207	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2346179

Field Sample ID: G4SD0172

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.2	P	30 - 160
EPA 8321B	Diuron-d6	74.3	P	30 - 160
EPA 8321B	Endothall-d6	158	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	97.5	P	30 - 160
EPA 8321B	Primidone-d5	99.5	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113916

Included Lab Sample IDs: 2346156, 2346158

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

Reference Method: DEP SOP: NU-094-1

Run ID: A113919

Included Lab Sample IDs: 2346156, 2346158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 110
Color (true)	105	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113947

Included Lab Sample IDs: 2346179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.9	94.9	P/P	60 - 160
Sucralose	113	112	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113950

Included Lab Sample IDs: 2346179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	125	126	P/P	60 - 160
Endothall	102	98.4	P/P	60 - 160
Glufosinate	107	103	P/P	60 - 160
Glyphosate	119	118	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113955

Included Lab Sample IDs: 2346157, 2346159

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

Reference Method: SM 5310 B-2011

Run ID: A113980

Included Lab Sample IDs: 2346157, 2346159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114014

Included Lab Sample IDs: 2346157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114026

Included Lab Sample IDs: 2346159

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114030

Included Lab Sample IDs: 2346157, 2346159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.4	P/P	90 - 110
Ammonia-N	99.4	99.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114048

Included Lab Sample IDs: 2346156, 2346158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	104	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114059

Included Lab Sample IDs: 2346156, 2346158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	97.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114059

Included Lab Sample IDs: 2346156, 2346158

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

Reference Method: EPA 8321B

Run ID: A114103

Included Lab Sample IDs: 2346179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.2	97.2	P/P	50 - 150
2,4,5-T	120	87.7	P/P	50 - 150
Acetaminophen	103	105	P/P	60 - 160
Acetamiprid	86.0	91.6	P/P	50 - 150
Afidopyropen	109	90.5	P/P	50 - 150
Bentazon	91.6	82.2	P/P	50 - 160
Benzovindiflupyr	110	89.7	P/P	50 - 150
Carbamazepine	93.9	87.5	P/P	60 - 150
Clothianidin	94.2	97.0	P/P	60 - 150
Dinotefuran	100	106	P/P	50 - 150
Diuron	94.9	90.7	P/P	60 - 160
Fenuron	98.9	96.5	P/P	60 - 150
Fluridone	117	108	P/P	60 - 160
Hydrocodone	105	104	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A114103
Included Lab Sample IDs: 2346179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	90.1	107	P/P	50 - 160
Imazapyr	96.7	96.0	P/P	50 - 150
Imidacloprid	95.7	97.2	P/P	60 - 150
Linuron	113	116	P/P	60 - 150
Mandestrobin	94.1	102	P/P	50 - 150
MCPP	104	102	P/P	50 - 150
Naproxen	115	104	P/P	50 - 160
Primidone	109	106	P/P	60 - 150
Pyraclostrobin	103	101	P/P	60 - 150
Silvex	110	90.5	P/P	50 - 150
Thiamethoxam	98.0	98.1	P/P	50 - 150
Tolfenpyrad	93.0	103	P/P	60 - 150
Triclopyr	117	90.8	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A114104
Included Lab Sample IDs: 2346159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	94.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A114116
Included Lab Sample IDs: 2346157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	93.4	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)	103			0.708	
	Color (true)	105			13.0	
EPA 180.1 Rev. 2.0	Turbidity	96.5			2.20	
EPA 300.0 Rev. 2.1	Chloride	102	96.8	96.8	0.269	
	Sulfate	98.8	91.9	93.7	0.0297	
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	98.0	99.4		0.749
	Ammonia-N	95.4	98.8	100		1.08
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	101	104		1.77
	Kjeldahl Nitrogen	97.6	102	102		0.0512
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.2	97.2		0.957
EPA 365.1 Rev. 2.0	Total-P	108	108	109		0.376
EPA 8321B	2,4-D	117	89.6	99.1		8.89
	2,4,5-T	98.8	59.3	71.4		18.6
	Acesulfame K	119	96.6	93.3		3.46
	Acetaminophen	82.9	70.5	75.1		6.26
	Acetamiprid	73.6	57.8	50.4		13.6
	Afidopyropen	62.7	67.8	75.3		10.5
	AMPA	146	111	110		1.26
	Bentazon	77.9	42.1	49.5		16.2
	Benzovindiflupyr	92.5	94.0	100		6.54
	Carbamazepine	97.6	91.1	95.1		4.28
	Clothianidin	110	116	110		4.88
	Dinotefuran	108	135	139		3.01
	Diuron	95.3	66.5	68.6		3.11
	Endothall	109	94.2	110		15.4
	Fenuron	98.5	79.6	85.5		7.11
	Fluridone	99.3	82.7	93.2		11.9
	Glufosinate	146	90.8	88.8		2.31
	Glyphosate	134	93.8	92.3		1.53
	Hydrocodone	98.3	98.3	107		8.68
	Ibuprofen	95.4	75.2	85.6		12.9
	Imazapyr	114	56.9	73.4		18.8
	Imidacloprid	98.0	123	133		7.63
	Linuron	105	89.8	84.6		6.01
	Mandestrobin	95.1	83.3	86.3		3.54
	MCPP	107	77.0	83.9		8.58
	Naproxen	78.4	65.1	64.0		1.80
	Primidone	109	118	105		11.7
	Pyraclostrobin	89.6	81.3	91.8		12.1
	Silvex	105	86.6	79.4		8.60
	Sucralose	136	111	110		0.576
	Thiamethoxam	103	143	155		7.99
	Tolfenpyrad	64.6	50.9	60.2		16.7
	Triclopyr	115	88.5	98.9		11.1
SM 2320 B-2011	Total Alkalinity	99.2			1.24	
SM 2540 C-2011	TDS				4.15	
SM 2540 D-2011	TSS				7.41	
SM 4500-F- C-2011	Fluoride	100	101	99.6		0.953
SM 5310 B-2011	Organic Carbon	99.0	94.6	94.2		0.207

Reference Method Descriptions

Method	Description	Associated Samples
--------	-------------	--------------------

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)	2346156, 2346158
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2346156, 2346158
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2346156, 2346158
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2346156, 2346158
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2346157, 2346159
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2346157, 2346159
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2346157, 2346159
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2346157, 2346159
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2346179
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2346156, 2346158
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2346156, 2346158
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2346156, 2346158
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2346156, 2346158
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2346157, 2346159

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	08/04/2022			08/04/2022 15:39	Blanca Fach	2346158
	08/04/2022			08/04/2022 16:00	Blanca Fach	2346156
EPA 180.1 Rev. 2.0	08/04/2022			08/04/2022 14:15	Anna M. Plaviak	2346158
	08/04/2022			08/04/2022 14:39	Anna M. Plaviak	2346156
EPA 300.0 Rev. 2.1	08/04/2022			08/11/2022 19:29	Anna M. Plaviak	2346156
	08/04/2022			08/11/2022 20:42	Anna M. Plaviak	2346158
EPA 350.1 Rev. 2.0	08/04/2022			08/11/2022 11:09	Ping Hua	2346157
	08/04/2022			08/11/2022 11:28	Ping Hua	2346159
EPA 351.2 Rev. 2.0	08/04/2022	08/09/2022 15:01	Alexandra J Mattheus	08/15/2022 12:54	Samantha L Bates	2346159
	08/04/2022	08/10/2022 13:15	Simonne.V. Calhoun	08/15/2022 15:29	Samantha L Bates	2346157
EPA 353.2 Rev. 2.0	08/04/2022			08/08/2022 10:40	Beverly Y. Sanders	2346157
	08/04/2022			08/08/2022 10:41	Beverly Y. Sanders	2346159
EPA 365.1 Rev. 2.0	08/04/2022	08/09/2022 09:37	Simonne.V. Calhoun	08/10/2022 17:08	James L Waggeberby	2346157
	08/04/2022	08/09/2022 09:37	Simonne.V. Calhoun	08/11/2022 11:37	Simonne.V. Calhoun	2346159
EPA 8321B	08/04/2022	08/05/2022 13:00	Umesh Chiluwal	08/05/2022 17:42	Umesh Chiluwal	2346179
	08/04/2022	08/05/2022 13:00	Umesh Chiluwal	08/06/2022 10:02	Umesh Chiluwal	2346179
	08/04/2022	08/10/2022 09:00	Hoor Shaik	08/12/2022 21:44	Juyoung Kim	2346179
SM 2320 B-2011	08/04/2022			08/12/2022 03:51	Dale L. Simmons	2346156
	08/04/2022			08/12/2022 04:02	Dale L. Simmons	2346158
SM 2540 C-2011	08/04/2022			08/09/2022 15:22	Yijie Li	2346156, 2346158
SM 2540 D-2011	08/04/2022			08/09/2022 15:22	Yijie Li	2346156, 2346158
SM 4500-F- C-2011	08/04/2022			08/12/2022 03:51	Dale L. Simmons	2346156
	08/04/2022			08/12/2022 04:02	Dale L. Simmons	2346158
SM 5310 B-2011	08/04/2022			08/08/2022 23:44	Khloe J Berg	2346159
	08/04/2022			08/09/2022 01:27	Khloe J Berg	2346157