

Chemical Analysis Report

SO-DIST-2022-11-18-02

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

Event Description: **2021 SMP: Spring Creek**
Request ID: **RQ-2022-11-14-39**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 09-DEC-2022 17:27



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: Spring Creek @ US41

Collection Date/Time: 11/17/2022 13:40

Field ID: G1SD0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370831	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P422601	
	SM 2320 B-2011	Total Alkalinity	264		mg CaCO3/L	P422891	
	SM 2540 D-2015	TSS	2	I	mg/L	P422927	
	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P422895	
2370832	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P423159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P422773	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P422723	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P422684	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P422886	
2370840	EPA 8321B	2,4-D	0.0047	I	ug/L	P422681	
		Acesulfame K	0.10	U	ug/L	P422568	
		2,4,5-T	0.0040	U	ug/L	P422681	
		AMPA	0.10	U	ug/L	P422568	
		Acetaminophen	0.0080	U	ug/L	P422681	
		Acetamiprid	0.0020	U	ug/L	P422681	
		Endothall	0.25	U	ug/L	P422568	MS
		Glufosinate	0.10	U	ug/L	P422568	
		Glyphosate	0.13	I	ug/L	P422568	
		Afidopyropen	0.0020	U	ug/L	P422681	
		Bentazon	0.26		ug/L	P422681	
		Sucralose	4.1		ug/L	P422568	
		Benzovindiflupyr	0.0020	U	ug/L	P422681	
		Carbamazepine	0.0062		ug/L	P422681	
		Clothianidin	0.0025	I	ug/L	P422681	
		Dinotefuran	0.0020	U	ug/L	P422681	
		Diuron	0.0020	U	ug/L	P422681	
		Fenuron	0.032	U	ug/L	P422681	
		Fluridone	0.038		ug/L	P422681	
		Imazapyr	0.15		ug/L	P422681	
		Hydrocodone	0.0020	U	ug/L	P422681	
		Ibuprofen	0.20	U	ug/L	P422681	
		Imidacloprid	0.0065	I J	ug/L	P422681	MS
		Linuron	0.0040	U	ug/L	P422681	
		Mandestrobin	0.0020	U	ug/L	P422681	
		MCP	0.0040	U	ug/L	P422681	
		Naproxen	0.0080	U	ug/L	P422681	
		Primidone	0.025		ug/L	P422681	
		Pyraclostrobin	0.0020	U	ug/L	P422681	
		Silvex	0.0040	U	ug/L	P422681	
		Thiamethoxam	0.0020	UJ	ug/L	P422681	MS
		Tolfenpyrad	0.0020	U	ug/L	P422681	
		Triclopyr	0.0040	U	ug/L	P422681	

Field ID: G1SD0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422773

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422723

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422684

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

Reference Method: EPA 8321B
Batch ID: P422568

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: P422681

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P422681

Component	Result	Code	Units
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: P422891

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

Reference Method: SM 2540 D-2015

Batch ID: P422927

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P422895

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P422886

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422773

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422723

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P422568

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	136		P	40 - 150
AMPA	111		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	111		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.9		P	40 - 150
2,4,5-T	70.0		P	40 - 150
Acetaminophen	88.1		P	30 - 150
Acetamiprid	78.0		P	40 - 150
Afidopyropen	57.9		P	30 - 150
Bentazon	94.0		P	30 - 150
Benzovindiflupyr	83.6		P	40 - 150
Carbamazepine	81.3		P	40 - 150
Clothianidin	96.7		P	40 - 150
Dinotefuran	102		P	40 - 150
Diuron	85.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P422681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	101		P	40 - 150
Fluridone	98.7		P	40 - 150
Hydrocodone	94.8		P	40 - 150
Ibuprofen	86.2		P	40 - 150
Imazapyr	88.4		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	89.0		P	40 - 150
Mandestrobin	93.5		P	40 - 150
MCPP	94.7		P	40 - 150
Naproxen	60.1		P	40 - 150
Primidone	83.3		P	40 - 150
Pyraclostrobin	80.8		P	40 - 150
Silvex	72.2		P	40 - 150
Thiamethoxam	95.7		P	40 - 150
Tolfenpyrad	48.4		P	30 - 150
Triclopyr	79.0		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P422891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.5		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P422927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

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

Reference Method: SM 5310 B-2011
Batch ID: P422886

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370803	Ammonia-N	94.0	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370805	Kjeldahl Nitrogen	91.9	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370848	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370832	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P422568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370304	Acesulfame K	53.9	49.8	P/P	40 - 150
2370304	AMPA	85.9	77.0	P/P	40 - 150
2370304	Endothall	168	170	F/F	40 - 150
2370304	Glufosinate	81.0	77.8	P/P	40 - 150
2370304	Glyphosate	103	105	P/P	40 - 150
2370304	Sucralose	92.5	98.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370840	2,4-D	119	124	P/P	40 - 150
2370840	2,4,5-T	70.4	81.3	P/P	40 - 150
2370840	Acetaminophen	104	104	P/P	30 - 150
2370840	Acetamiprid	64.3	64.8	P/P	40 - 150
2370840	Afidopyropen	59.4	69.6	P/P	30 - 150
2370840	Benzovindiflupyr	79.4	83.4	P/P	40 - 150
2370840	Carbamazepine	72.2	67.8	P/P	40 - 150
2370840	Clothianidin	135	137	P/P	40 - 150
2370840	Dinotefuran	138	143	P/P	40 - 150
2370840	Diuron	57.7	61.9	P/P	40 - 150
2370840	Fenuron	97.9	91.9	P/P	40 - 150
2370840	Hydrocodone	128	119	P/P	40 - 150
2370840	Ibuprofen	76.5	83.2	P/P	40 - 150
2370840	Imidacloprid	157	146	F/P	40 - 150
2370840	Linuron	67.9	69.3	P/P	40 - 150
2370840	Mandestrobin	81.5	86.3	P/P	40 - 150
2370840	MCP	102	104	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P422681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370840	Naproxen	81.8	101	P/P	40 - 150
2370840	Primidone	119	106	P/P	40 - 150
2370840	Pyraclostrobin	80.0	84.3	P/P	40 - 150
2370840	Silvex	101	107	P/P	40 - 150
2370840	Thiamethoxam	163	158	F/F	40 - 150
2370840	Tolfenpyrad	50.8	51.4	P/P	30 - 150
2370840	Triclopyr	75.6	93.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370883	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370885	Organic Carbon	97.2	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370667	Turbidity	4.99	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370803	Ammonia-N	1.42	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370805	Kjeldahl Nitrogen	2.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370848	NO2NO3-N	0.471	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370832	Total-P	0.818	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P422568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370304	Acesulfame K	7.90	Spike	P	0 - 30
2370304	AMPA	9.41	Spike	P	0 - 30
2370304	Endothall	0.917	Spike	P	0 - 30
2370304	Glufosinate	4.04	Spike	P	0 - 30
2370304	Glyphosate	1.43	Spike	P	0 - 30
2370304	Sucralose	5.16	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P422681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370840	2,4-D	4.01	Spike	P	0 - 30
2370840	2,4,5-T	14.3	Spike	P	0 - 30
2370840	Acetaminophen	0.320	Spike	P	0 - 30
2370840	Acetamidrid	0.869	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P422681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370840	Afidopyropen	15.8	Spike	P	0 - 30
2370840	Bentazon	2.69	Spike	P	0 - 30
2370840	Benzovindiflupyr	4.94	Spike	P	0 - 30
2370840	Carbamazepine	4.42	Spike	P	0 - 30
2370840	Clothianidin	1.53	Spike	P	0 - 30
2370840	Dinotefuran	3.36	Spike	P	0 - 30
2370840	Diuron	7.10	Spike	P	0 - 30
2370840	Fenuron	6.39	Spike	P	0 - 30
2370840	Fluridone	0.579	Spike	P	0 - 30
2370840	Hydrocodone	7.36	Spike	P	0 - 30
2370840	Ibuprofen	8.46	Spike	P	0 - 30
2370840	Imazapyr	1.88	Spike	P	0 - 30
2370840	Imidacloprid	6.84	Spike	P	0 - 30
2370840	Linuron	2.14	Spike	P	0 - 30
2370840	Mandestrobin	5.80	Spike	P	0 - 30
2370840	MCPP	1.15	Spike	P	0 - 30
2370840	Naproxen	20.9	Spike	P	0 - 30
2370840	Primidone	9.11	Spike	P	0 - 30
2370840	Pyraclostrobin	5.30	Spike	P	0 - 30
2370840	Silvex	5.80	Spike	P	0 - 30
2370840	Thiamethoxam	3.39	Spike	P	0 - 30
2370840	Tolfenpyrad	1.06	Spike	P	0 - 30
2370840	Triclopyr	21.3	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P422891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370883	Total Alkalinity	0.595	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370883	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P422886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370885	Organic Carbon	1.24	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2370840

Field Sample ID: G1SD0109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.7	P	30 - 160
EPA 8321B	Diuron-d6	52.0	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.6	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116038

Included Lab Sample IDs: 2370831

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116096

Included Lab Sample IDs: 2370832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116101

Included Lab Sample IDs: 2370832

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

Reference Method: EPA 8321B

Run ID: A116135

Included Lab Sample IDs: 2370840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	111	P/P	60 - 160
Endothall	109	105	P/P	60 - 160
Glufosinate	104	99.2	P/P	60 - 160
Glyphosate	121	113	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116141

Included Lab Sample IDs: 2370840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	147	131	P/P	60 - 160
Sucralose	106	88.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116170

Included Lab Sample IDs: 2370840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	95.9	P/P	50 - 150
2,4,5-T	111	102	P/P	50 - 150
Acetaminophen	106	99.7	P/P	60 - 160
Acetamiprid	109	105	P/P	50 - 150
Afidopyropen	107	89.5	P/P	50 - 150
Bentazon	99.9	104	P/P	50 - 160
Benzovindiflupyr	115	109	P/P	50 - 150
Carbamazepine	108	107	P/P	60 - 150
Clothianidin	110	96.8	P/P	60 - 150
Dinotefuran	109	113	P/P	50 - 150
Diuron	127	112	P/P	60 - 160
Fenuron	107	107	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A116170
Included Lab Sample IDs: 2370840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	111	110	P/P	60 - 160
Hydrocodone	112	104	P/P	60 - 150
Ibuprofen	109	96.7	P/P	50 - 160
Imazapyr	96.3	103	P/P	50 - 150
Imidacloprid	96.6	94.0	P/P	60 - 150
Linuron	112	118	P/P	60 - 150
Mandestrobin	108	109	P/P	50 - 150
MCP	112	109	P/P	50 - 150
Naproxen	92.8	73.1	P/P	50 - 160
Primidone	114	101	P/P	60 - 150
Pyraclostrobin	105	105	P/P	60 - 150
Silvex	99.3	94.3	P/P	50 - 150
Thiamethoxam	105	104	P/P	50 - 150
Tolfenpyrad	104	103	P/P	60 - 150
Triclopyr	119	112	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A116179
Included Lab Sample IDs: 2370832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A116180
Included Lab Sample IDs: 2370831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.9	95.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A116180
Included Lab Sample IDs: 2370831

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A116198
Included Lab Sample IDs: 2370832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A116280
Included Lab Sample IDs: 2370832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.2	97.0	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity	101				4.99	
EPA 350.1 Rev. 2.0	Ammonia-N	93.0	94.0	95.6			1.42
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.4	91.9	95.7			2.11
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	106	106			0.471
EPA 365.1 Rev. 2.0	Total-P	107	104	105			0.818
EPA 8321B	2,4-D	88.9	119	124			4.01
	2,4,5-T	70.0	70.4	81.3			14.3
	Acesulfame K	136	53.9	49.8			7.90
	Acetaminophen	88.1	104	104			0.320
	Acetamiprid	78.0	64.3	64.8			0.869
	Afidopyropen	57.9	59.4	69.6			15.8
	AMPA	111	85.9	77.0			9.41
	Bentazon	94.0					2.69
	Benzovindiflupyr	83.6	79.4	83.4			4.94
	Carbamazepine	81.3	72.2	67.8			4.42
	Clothianidin	96.7	135	137			1.53
	Dinotefuran	102	138	143			3.36
	Diuron	85.7	57.7	61.9			7.10
	Endothall	112	168	170			0.917
	Fenuron	101	97.9	91.9			6.39
	Fluridone	98.7					0.579
	Glufosinate	107	81.0	77.8			4.04
	Glyphosate	111	103	105			1.43
	Hydrocodone	94.8	128	119			7.36
	Ibuprofen	86.2	76.5	83.2			8.46
	Imazapyr	88.4					1.88
	Imidacloprid	102	157	146			6.84
	Linuron	89.0	67.9	69.3			2.14
	Mandestrobin	93.5	81.5	86.3			5.80
	MCPP	94.7	102	104			1.15
	Naproxen	60.1	81.8	101			20.9
	Primidone	83.3	119	106			9.11
	Pyraclostrobin	80.8	80.0	84.3			5.30
	Silvex	72.2	101	107			5.80
	Sucralose	102	92.5	98.0			5.16
	Thiamethoxam	95.7	163	158			3.39
	Tolfenpyrad	48.4	50.8	51.4			1.06
	Triclopyr	79.0	75.6	93.6			21.3
SM 2320 B-2011	Total Alkalinity	97.5				0.595	
SM 2540 D-2015	TSS	98.1					
SM 4500-F- C-2011	Fluoride	102	101	101			0.0
SM 5310 B-2011	Organic Carbon	96.4	97.2	95.3			1.24

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2370831
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2370832
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2370832
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2370832
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2370832
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2370840
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2370831

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2370831
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2370831
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2370832

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/18/2022			11/18/2022 14:01	Khloe J Berg	2370831
EPA 350.1 Rev. 2.0	11/18/2022			12/06/2022 11:58	Ping Hua	2370832
EPA 351.2 Rev. 2.0	11/18/2022	11/28/2022 13:20	Simonne.V. Calhoun	11/30/2022 16:09	Judith K. Clark	2370832
EPA 353.2 Rev. 2.0	11/18/2022			11/22/2022 10:55	Beverly Y. Sanders	2370832
EPA 365.1 Rev. 2.0	11/18/2022	11/21/2022 15:27	Adam P Silver	11/22/2022 12:50	James L Waggeberby	2370832
EPA 8321B	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/22/2022 09:13	Umesh Chiluwal	2370840
	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/23/2022 01:32	Umesh Chiluwal	2370840
	11/18/2022	11/22/2022 09:30	June Rhew	11/23/2022 15:16	Juyoung Kim	2370840
	11/18/2022	11/22/2022 09:30	June Rhew	11/29/2022 12:18	Juyoung Kim	2370840
SM 2320 B-2011	11/18/2022			11/30/2022 05:31	Dale L. Simmons	2370831
SM 2540 D-2015	11/18/2022			11/22/2022 16:06	Yijie Li	2370831
SM 4500-F- C-2011	11/18/2022			11/30/2022 05:31	Dale L. Simmons	2370831
SM 5310 B-2011	11/18/2022			11/29/2022 20:13	Khloe J Berg	2370832