

Chemical Analysis Report

SO-DIST-2022-06-28-03

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

Event Description: **2021 SMP: Continuous Lee**
Request ID: **RQ-2022-06-13-34**
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: Liang Lin, Environmental Administrator

Date Certified: 19-JUL-2022 10:35

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

Results for the following analytical groups are included in this report: 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: 06/27/2022 09:05

Field ID: G1SD0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2337645	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P415900	
	SM 2320 B-2011	Total Alkalinity	196		mg CaCO3/L	P416073	
	SM 2540 D-2011	TSS	2	U	mg/L	P416101	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P416339	
2337646	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P416263	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P415921	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P416428	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P416137	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P416106	
2337651	EPA 8321B	2,4-D	0.029		ug/L	P415930	
		Acesulfame K	0.10	I	ug/L	P415853	
		2,4,5-T	0.0040	U	ug/L	P415930	
		AMPA	0.16	I	ug/L	P415853	
		Acetaminophen	0.0080	U	ug/L	P415930	
		Acetamiprid	0.0020	U	ug/L	P415930	
		Endothall	0.25	U	ug/L	P415853	
		Glufosinate	0.10	U	ug/L	P415853	
		Glyphosate	0.61		ug/L	P415853	
		Afidopyropen	0.0020	U	ug/L	P415930	
		Bentazon	0.052		ug/L	P415930	
		Sucralose	0.94		ug/L	P415853	
		Benzovindiflupyr	0.0020	U	ug/L	P415930	
		Carbamazepine	8.0E-04	U	ug/L	P415930	
		Clothianidin	0.015		ug/L	P415930	
		Dinotefuran	0.044		ug/L	P415930	
		Diuron	0.0020	U	ug/L	P415930	
		Fenuron	0.032	U	ug/L	P415930	
		Fluridone	0.020		ug/L	P415930	
		Imazapyr	0.072		ug/L	P415930	
		Hydrocodone	0.0020	U	ug/L	P415930	
		Ibuprofen	0.080	U	ug/L	P415930	
		Imidacloprid	0.29		ug/L	P415930	
		Linuron	0.0040	U	ug/L	P415930	
		Mandestrobin	0.0020	U	ug/L	P415930	
		MCP	0.0040	U	ug/L	P415930	
		Naproxen	0.0080	U	ug/L	P415930	MS, RPD
		Primidone	0.0050	I	ug/L	P415930	
		Pyraclostrobin	0.0020	U	ug/L	P415930	
		Silvex	0.0040	U	ug/L	P415930	
		Thiamethoxam	0.0020	U	ug/L	P415930	
		Tolfenpyrad	0.0020	U	ug/L	P415930	
		Triclopyr	0.0040	U	ug/L	P415930	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415900

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416428

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416137

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

Reference Method: EPA 8321B
Batch ID: P415853

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: P415930

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: P415930

Component	Result	Code	Units
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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: P416073

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

Reference Method: SM 2540 D-2011

Batch ID: P416101

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P416339

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P416106

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: P415900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416428

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416137

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

Reference Method: EPA 8321B
Batch ID: P415853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.8		P	40 - 150
AMPA	102		P	40 - 150
Endothall	94.6		P	40 - 150
Glufosinate	95.1		P	40 - 150
Glyphosate	102		P	40 - 150
Sucralose	98.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.8		P	40 - 150
2,4,5-T	56.0		P	40 - 150
Acetaminophen	99.4		P	30 - 150
Acetamiprid	95.3		P	40 - 150
Afidopyropen	70.9		P	30 - 150
Bentazon	79.0		P	30 - 150
Benzovindiflupyr	91.0		P	40 - 150
Carbamazepine	97.9		P	40 - 150
Clothianidin	105		P	40 - 150
Dinotefuran	108		P	40 - 150
Diuron	85.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P415930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	107		P	40 - 150
Fluridone	92.9		P	40 - 150
Hydrocodone	99.7		P	40 - 150
Ibuprofen	80.4		P	40 - 150
Imazapyr	96.1		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	101		P	40 - 150
Mandestrobin	97.4		P	40 - 150
MCPP	104		P	40 - 150
Naproxen	72.4		P	40 - 150
Primidone	98.9		P	40 - 150
Pyraclostrobin	80.7		P	40 - 150
Silvex	62.7		P	40 - 150
Thiamethoxam	95.3		P	40 - 150
Tolfenpyrad	49.4		P	30 - 150
Triclopyr	63.6		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P416073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P416339

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

Reference Method: SM 5310 B-2011
Batch ID: P416106

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 350.1 Rev. 2.0
Batch ID: P416263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337715	Ammonia-N	98.0	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337335	Kjeldahl Nitrogen	103	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337646	NO2NO3-N	98.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337731	Total-P	102	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P415853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337358	Acesulfame K	101	101	P/P	40 - 150
2337358	AMPA	95.0	97.0	P/P	40 - 150
2337358	Endothall	96.0	96.6	P/P	40 - 150
2337358	Glufosinate	87.6	85.2	P/P	40 - 150
2337358	Glyphosate	78.8	84.4	P/P	40 - 150
2337358	Sucralose	101	101	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337897	2,4-D	83.6	79.8	P/P	40 - 150
2337897	2,4,5-T	48.0	49.7	P/P	40 - 150
2337897	Acetaminophen	104	101	P/P	30 - 150
2337897	Acetamiprid	101	101	P/P	40 - 150
2337897	Afidopyropen	70.2	71.8	P/P	30 - 150
2337897	Bentazon	52.1	59.6	P/P	30 - 150
2337897	Benzovindiflupyr	85.7	81.8	P/P	40 - 150
2337897	Carbamazepine	92.2	89.3	P/P	40 - 150
2337897	Clothianidin	98.1	102	P/P	40 - 150
2337897	Dinotefuran	126	122	P/P	40 - 150
2337897	Diuron	86.8	80.0	P/P	40 - 150
2337897	Fenuron	90.1	92.0	P/P	40 - 150
2337897	Fluridone	79.5	78.1	P/P	40 - 150
2337897	Hydrocodone	96.5	94.3	P/P	40 - 150
2337897	Ibuprofen	76.1	67.2	P/P	40 - 150
2337897	Imazapyr	85.5	82.5	P/P	40 - 150
2337897	Imidacloprid	122	120	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P415930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337897	Linuron	81.6	79.3	P/P	40 - 150
2337897	Mandestrobin	79.8	79.3	P/P	40 - 150
2337897	MCPP	83.7	81.9	P/P	40 - 150
2337897	Naproxen	68.4	38.0	P/F	40 - 150
2337897	Primidone	87.2	89.8	P/P	40 - 150
2337897	Pyraclostrobin	80.6	78.0	P/P	40 - 150
2337897	Silvex	56.1	50.8	P/P	40 - 150
2337897	Thiamethoxam	116	112	P/P	40 - 150
2337897	Tolfenpyrad	47.3	44.5	P/P	30 - 150
2337897	Triclopyr	57.2	59.3	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P416339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337656	Fluoride	103	102	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P416106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337911	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337497	Turbidity	3.38	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337715	Ammonia-N	2.32	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337335	Kjeldahl Nitrogen	6.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337646	NO2NO3-N	0.966	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337731	Total-P	2.29	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P415853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337358	Acesulfame K	0.243	Spike	P	0 - 30
2337358	AMPA	2.06	Spike	P	0 - 30
2337358	Endothall	0.564	Spike	P	0 - 30
2337358	Glufosinate	2.77	Spike	P	0 - 30
2337358	Glyphosate	6.86	Spike	P	0 - 30
2337358	Sucralose	0.137	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P415930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337897	2,4-D	4.62	Spike	P	0 - 30
2337897	2,4,5-T	3.53	Spike	P	0 - 30
2337897	Acetaminophen	3.12	Spike	P	0 - 30
2337897	Acetamidrid	0.520	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P415930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337897	Afidopyropen	2.21	Spike	P	0 - 30
2337897	Bentazon	13.4	Spike	P	0 - 30
2337897	Benzovindiflupyr	4.67	Spike	P	0 - 30
2337897	Carbamazepine	3.20	Spike	P	0 - 30
2337897	Clothianidin	3.67	Spike	P	0 - 30
2337897	Dinotefuran	2.87	Spike	P	0 - 30
2337897	Diuron	8.21	Spike	P	0 - 30
2337897	Fenuron	2.15	Spike	P	0 - 30
2337897	Fluridone	1.84	Spike	P	0 - 30
2337897	Hydrocodone	2.33	Spike	P	0 - 30
2337897	Ibuprofen	12.4	Spike	P	0 - 30
2337897	Imazapyr	3.57	Spike	P	0 - 30
2337897	Imidacloprid	1.36	Spike	P	0 - 30
2337897	Linuron	2.87	Spike	P	0 - 30
2337897	Mandestrobin	0.610	Spike	P	0 - 30
2337897	MCPP	2.22	Spike	P	0 - 30
2337897	Naproxen	57.1	Spike	F	0 - 30
2337897	Primidone	3.00	Spike	P	0 - 30
2337897	Pyraclostrobin	3.24	Spike	P	0 - 30
2337897	Silvex	9.81	Spike	P	0 - 30
2337897	Thiamethoxam	3.26	Spike	P	0 - 30
2337897	Tolfenpyrad	6.03	Spike	P	0 - 30
2337897	Triclopyr	3.58	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P416073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337487	Total Alkalinity	1.11	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P416339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337656	Fluoride	0.480	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337911	Organic Carbon	0.0628	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2337651
Field Sample ID: G1SD0109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	67.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.9	P	30 - 160
EPA 8321B	Diuron-d6	64.7	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.2	P	30 - 160
EPA 8321B	Primidone-d5	92.6	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113141

Included Lab Sample IDs: 2337645

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

Reference Method: EPA 8321B

Run ID: A113181

Included Lab Sample IDs: 2337651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	104	P/P	60 - 160
Sucralose	102	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113183

Included Lab Sample IDs: 2337651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	97.3	P/P	60 - 160
Endothall	93.9	84.7	P/P	60 - 160
Glufosinate	77.3	64.9	P/P	60 - 160
Glyphosate	99.3	90.3	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A113225

Included Lab Sample IDs: 2337645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113231

Included Lab Sample IDs: 2337651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.9	95.1	P/P	50 - 150
2,4,5-T	94.5	107	P/P	50 - 150
Acetaminophen	99.1	102	P/P	60 - 160
Acetamiprid	105	105	P/P	50 - 150
Afidopyropen	104	109	P/P	50 - 150
Bentazon	77.2	106	P/P	50 - 160
Benzovindiflupyr	111	108	P/P	50 - 150
Carbamazepine	106	106	P/P	60 - 150
Clothianidin	110	103	P/P	60 - 150
Dinotefuran	104	104	P/P	50 - 150
Diuron	102	116	P/P	60 - 160
Fenuron	101	102	P/P	60 - 150
Fluridone	105	97.4	P/P	60 - 160
Hydrocodone	101	103	P/P	60 - 150
Ibuprofen	127	95.1	P/P	50 - 160
Imazapyr	97.9	87.0	P/P	50 - 150
Imidacloprid	96.2	98.5	P/P	60 - 150
Linuron	108	105	P/P	60 - 150
Mandestrobin	106	104	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113231
Included Lab Sample IDs: 2337651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	105	105	P/P	50 - 150
Naproxen	107	74.0	P/P	50 - 160
Primidone	96.6	93.2	P/P	60 - 150
Pyraclostrobin	103	102	P/P	60 - 150
Silvex	90.7	96.5	P/P	50 - 150
Thiamethoxam	97.5	99.6	P/P	50 - 150
Tolfenpyrad	96.1	96.8	P/P	60 - 150
Triclopyr	105	103	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113239
Included Lab Sample IDs: 2337646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	95.2	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A113244
Included Lab Sample IDs: 2337646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113332
Included Lab Sample IDs: 2337646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113361
Included Lab Sample IDs: 2337646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113368
Included Lab Sample IDs: 2337645

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113420
Included Lab Sample IDs: 2337646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	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	97.3				3.38	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	98.0	95.4			2.32
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.2	103	95.9			6.52
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	98.5	100			0.966
EPA 365.1 Rev. 2.0	Total-P	102	102	105			2.29
EPA 8321B	2,4-D	86.8	83.6	79.8			4.62
	2,4,5-T	56.0	48.0	49.7			3.53
	Acesulfame K	98.8	101	101			0.243
	Acetaminophen	99.4	104	101			3.12
	Acetamiprid	95.3	101	101			0.520
	Afidopyropen	70.9	70.2	71.8			2.21
	AMPA	102	95.0	97.0			2.06
	Bentazon	79.0	52.1	59.6			13.4
	Benzovindiflupyr	91.0	85.7	81.8			4.67
	Carbamazepine	97.9	92.2	89.3			3.20
	Clothianidin	105	98.1	102			3.67
	Dinotefuran	108	126	122			2.87
	Diuron	85.7	86.8	80.0			8.21
	Endothall	94.6	96.0	96.6			0.564
	Fenuron	107	90.1	92.0			2.15
	Fluridone	92.9	79.5	78.1			1.84
	Glufosinate	95.1	87.6	85.2			2.77
	Glyphosate	102	78.8	84.4			6.86
	Hydrocodone	99.7	96.5	94.3			2.33
	Ibuprofen	80.4	76.1	67.2			12.4
	Imazapyr	96.1	85.5	82.5			3.57
	Imidacloprid	104	122	120			1.36
	Linuron	101	81.6	79.3			2.87
	Mandestrobin	97.4	79.8	79.3			0.610
	MCPP	104	83.7	81.9			2.22
	Naproxen	72.4	68.4	38.0			57.1
	Primidone	98.9	87.2	89.8			3.00
	Pyraclostrobin	80.7	80.6	78.0			3.24
	Silvex	62.7	56.1	50.8			9.81
	Sucralose	98.5	101	101			0.137
	Thiamethoxam	95.3	116	112			3.26
	Tolfenpyrad	49.4	47.3	44.5			6.03
	Triclopyr	63.6	57.2	59.3			3.58
SM 2320 B-2011	Total Alkalinity	100				1.11	
SM 4500-F- C-2011	Fluoride	102	103	102			0.480
SM 5310 B-2011	Organic Carbon	97.4	100	100			0.0628

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2337645
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2337646
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2337646
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2337646
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2337646
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2337651
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2337645
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2337645

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2337645
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2337646

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	06/28/2022			06/28/2022 13:58	Anna M. Plaviak	2337645
EPA 350.1 Rev. 2.0	06/28/2022			07/07/2022 11:04	Ping Hua	2337646
EPA 351.2 Rev. 2.0	06/28/2022	06/30/2022 14:06	Samantha L Bates	07/01/2022 13:25	Alexandra J Mattheus	2337646
EPA 353.2 Rev. 2.0	06/28/2022			07/11/2022 12:40	Judith K. Clark	2337646
EPA 365.1 Rev. 2.0	06/28/2022	07/06/2022 16:30	Adam P Silver	07/07/2022 16:53	James L Waggeberby	2337646
EPA 8321B	06/28/2022	06/29/2022 11:30	Umesh Chiluwal	06/29/2022 18:21	Umesh Chiluwal	2337651
	06/28/2022	06/29/2022 11:30	Umesh Chiluwal	06/30/2022 05:35	Umesh Chiluwal	2337651
	06/28/2022	06/29/2022 13:30	June Rhew	06/30/2022 21:14	Juyoung Kim	2337651
SM 2320 B-2011	06/28/2022			06/29/2022 23:45	Dale L. Simmons	2337645
SM 2540 D-2011	06/28/2022			06/30/2022 16:00	Blanca Fach	2337645
SM 4500-F- C-2011	06/28/2022			07/08/2022 02:41	Dale L. Simmons	2337645
SM 5310 B-2011	06/28/2022			06/30/2022 17:39	Khloe J Berg	2337646