

Chemical Analysis Report

SO-DIST-2021-03-25-01

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

Event Description: **2021 SMP: Lee County Sampling 10MGR10**
Request ID: **RQ-2021-03-08-45**
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: Chris Hormuth

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-APR-2021 13:00

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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 group are included in this report: 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: 10M1GR10

Collection Date/Time: 03/24/2021 09:26

Field ID: 10M1GR10

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233629	EPA 8321B	2,4-D	0.0020	I	ug/L	P395359	
		Acesulfame K	0.10	U	ug/L	P395510	MS
		2,4,5-T	0.0040	U	ug/L	P395359	
		AMPA	0.10	U	ug/L	P395510	
		Sucralose	0.44		ug/L	P395510	
		Acetaminophen	0.022	I	ug/L	P395359	
		Acetamiprid	0.0020	U	ug/L	P395359	
		Endothall	0.25	U	ug/L	P395510	
		Glufosinate	0.10	U	ug/L	P395510	
		Glyphosate	0.10	U	ug/L	P395510	
		Afidopyropen	0.0020	U	ug/L	P395359	
		Bentazon	0.023		ug/L	P395359	
		Benzovindiflupyr	0.0020	U	ug/L	P395359	
		Carbamazepine	0.0014	I	ug/L	P395359	
		Clothianidin	0.0020	U	ug/L	P395359	
		Dinotefuran	0.0020	U	ug/L	P395359	
		Diuron	0.0028	I	ug/L	P395359	
		Fenuron	0.016	U	ug/L	P395359	
		Fluridone	0.067		ug/L	P395359	
		Imazapyr	0.042		ug/L	P395359	
		Hydrocodone	0.0020	U	ug/L	P395359	
		Ibuprofen	0.020	U	ug/L	P395359	
		Imidacloprid	0.0024	I	ug/L	P395359	MS
		Linuron	0.0040	U	ug/L	P395359	
		Mandestrobin	0.0020	U	ug/L	P395359	
		MCPP	0.0020	U	ug/L	P395359	
		Naproxen	0.0080	U	ug/L	P395359	
		Primidone	0.0040	U	ug/L	P395359	
		Pyraclostrobin	0.0020	U	ug/L	P395359	
		Thiamethoxam	0.0020	U	ug/L	P395359	MS
		Tolfenpyrad	0.0020	U	ug/L	P395359	
		Triclopyr	0.0040	U	ug/L	P395359	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P395359

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	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	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	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P395510

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P395359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	30 - 160
2,4,5-T	92.4		P	30 - 160
Acetaminophen	87.9		P	30 - 160
Acetamiprid	108		P	30 - 160
Afidopyropen	81.9		P	30 - 160
Bentazon	59.0		P	30 - 160
Benzovindiflupyr	103		P	30 - 160
Carbamazepine	106		P	30 - 160
Clothianidin	121		P	30 - 160
Dinotefuran	96.3		P	30 - 160
Diuron	80.6		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	97.4		P	30 - 160
Hydrocodone	114		P	30 - 160
Ibuprofen	77.5		P	30 - 160
Imazapyr	87.4		P	30 - 160
Imidacloprid	118		P	30 - 160
Linuron	80.4		P	30 - 160
Mandestrobin	102		P	30 - 160
MCPP	113		P	30 - 160
Naproxen	68.8		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	83.7		P	30 - 160
Thiamethoxam	125		P	30 - 160
Tolfenpyrad	52.6		P	30 - 160
Triclopyr	103		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P395510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	139		P	40 - 150
AMPA	115		P	40 - 150
Endothall	89.0		P	40 - 150
Glufosinate	101		P	40 - 150
Glyphosate	80.1		P	40 - 140
Sucralose	101		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P395359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233518	2,4-D	97.3	97.2	P/P	30 - 160
2233518	2,4,5-T	70.7	69.6	P/P	30 - 160
2233518	Acetaminophen	83.0	94.8	P/P	30 - 160
2233518	Acetamiprid	114	93.5	P/P	30 - 160
2233518	Afidopyropen	76.1	60.5	P/P	30 - 160
2233518	Bentazon	32.3	37.3	P/P	30 - 160
2233518	Benzovindiflupyr	94.4	93.3	P/P	30 - 160
2233518	Carbamazepine	87.3	90.1	P/P	30 - 160
2233518	Clothianidin	123	116	P/P	30 - 160
2233518	Dinotefuran	112	99.9	P/P	30 - 160
2233518	Diuron	53.8	59.2	P/P	30 - 160
2233518	Fenuron	81.8	86.5	P/P	30 - 160
2233518	Fluridone	83.7	82.1	P/P	30 - 160
2233518	Hydrocodone	121	116	P/P	30 - 160
2233518	Ibuprofen	68.8	70.6	P/P	30 - 160
2233518	Imazapyr	82.4	83.7	P/P	30 - 160
2233518	Imidacloprid	169	160	F/F	30 - 160
2233518	Linuron	65.7	65.5	P/P	30 - 160
2233518	Mandestrobin	90.7	89.2	P/P	30 - 160
2233518	MCCP	91.9	92.0	P/P	30 - 160
2233518	Naproxen	55.5	65.4	P/P	30 - 160
2233518	Primidone	95.7	102	P/P	30 - 160
2233518	Pyraclostrobin	87.0	87.9	P/P	30 - 160
2233518	Thiamethoxam	163	153	F/P	30 - 160
2233518	Tolfenpyrad	55.4	63.0	P/P	30 - 160
2233518	Triclopyr	75.5	80.6	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233336	Acesulfame K	198	211	F/F	40 - 150
2233336	AMPA	114	136	P/P	40 - 150
2233336	Endothall	80.8	77.0	P/P	40 - 150
2233336	Glufosinate	104	103	P/P	40 - 150
2233336	Glyphosate	63.7	67.4	P/P	40 - 140
2233336	Sucralose	97.9	99.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P395359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233518	2,4-D	0.191	Spike	P	0 - 30
2233518	2,4,5-T	1.64	Spike	P	0 - 30
2233518	Acetaminophen	11.5	Spike	P	0 - 30
2233518	Acetamiprid	19.4	Spike	P	0 - 30
2233518	Afidopyropen	22.8	Spike	P	0 - 30
2233518	Bentazon	14.3	Spike	P	0 - 30
2233518	Benzovindiflupyr	1.16	Spike	P	0 - 30
2233518	Carbamazepine	3.20	Spike	P	0 - 30
2233518	Clothianidin	5.50	Spike	P	0 - 30
2233518	Dinotefuran	11.6	Spike	P	0 - 30
2233518	Diuron	9.59	Spike	P	0 - 30
2233518	Fenuron	5.63	Spike	P	0 - 30
2233518	Fluridone	1.94	Spike	P	0 - 30
2233518	Hydrocodone	4.41	Spike	P	0 - 30
2233518	Ibuprofen	2.54	Spike	P	0 - 30
2233518	Imazapyr	1.53	Spike	P	0 - 30
2233518	Imidacloprid	5.22	Spike	P	0 - 30
2233518	Linuron	0.364	Spike	P	0 - 30
2233518	Mandestrobin	1.66	Spike	P	0 - 30
2233518	MCP	0.161	Spike	P	0 - 30
2233518	Naproxen	16.4	Spike	P	0 - 30
2233518	Primidone	6.09	Spike	P	0 - 30
2233518	Pyraclostrobin	0.979	Spike	P	0 - 30
2233518	Thiamethoxam	6.43	Spike	P	0 - 30
2233518	Tolfenpyrad	12.8	Spike	P	0 - 30
2233518	Triclopyr	6.59	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P395510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233336	Acesulfame K	6.12	Spike	P	0 - 30
2233336	AMPA	17.4	Spike	P	0 - 30
2233336	Endothall	4.83	Spike	P	0 - 30
2233336	Glufosinate	0.584	Spike	P	0 - 30
2233336	Glyphosate	5.70	Spike	P	0 - 30
2233336	Sucralose	1.49	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2233629

Field Sample ID: 10M1GR10

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.9	P	30 - 160
EPA 8321B	Diuron-d6	68.8	P	30 - 160
EPA 8321B	Endothall-d6	96.1	P	40 - 160
EPA 8321B	Endothall-d6	96.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	58.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	58.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.1	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A104297
 Included Lab Sample IDs: 2233629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.0	89.2	P/P	50 - 150
2,4,5-T	88.6	71.3	P/P	50 - 150
Acetaminophen	87.9	93.0	P/P	60 - 160
Acetamiprid	104	107	P/P	50 - 150
Afidopyropen	94.9	96.6	P/P	50 - 150
Bentazon	71.9	67.2	P/P	50 - 160
Benzovindiflupyr	112	117	P/P	50 - 160
Carbamazepine	104	107	P/P	60 - 150
Clothianidin	105	109	P/P	60 - 150
Dinotefuran	93.4	99.6	P/P	50 - 150
Diuron	106	103	P/P	60 - 160
Fenuron	96.8	98.1	P/P	60 - 150
Fluridone	111	112	P/P	60 - 160
Hydrocodone	109	124	P/P	60 - 150
Ibuprofen	71.5	92.9	P/P	50 - 160
Imazapyr	66.5	73.8	P/P	50 - 160
Imidacloprid	99.9	105	P/P	60 - 150
Linuron	95.8	99.5	P/P	60 - 150
Mandestrobin	105	115	P/P	50 - 150
MCPP	92.8	91.2	P/P	50 - 150
Naproxen	114	75.6	P/P	50 - 160
Primidone	99.5	95.8	P/P	60 - 150
Pyraclostrobin	110	111	P/P	60 - 150
Thiamethoxam	109	120	P/P	50 - 150
Tolfenpyrad	109	114	P/P	60 - 150
Triclopyr	81.6	88.0	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A104352
 Included Lab Sample IDs: 2233629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	144	126	P/P	40 - 160
AMPA	115	115	P/P	40 - 160
Endothall	89.7	87.5	P/P	40 - 160
Glufosinate	120	120	P/P	40 - 160
Glyphosate	158	137	P/P	40 - 160

Reference Method: EPA 8321B
 Run ID: A104508
 Included Lab Sample IDs: 2233629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.5	96.5	P/P	60 - 160

* 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 SMP	MS
			LCS			
EPA 8321B	2,4-D	122	97.3	97.2		0.191
	2,4,5-T	92.4	70.7	69.6		1.64
	Acesulfame K	139	198	211		6.12
	Acetaminophen	87.9	83.0	94.8		11.5
	Acetamiprid	108	114	93.5		19.4
	Afidopyropen	81.9	76.1	60.5		22.8
	AMPA	115	114	136		17.4
	Bentazon	59.0	32.3	37.3		14.3
	Benzovindiflupyr	103	94.4	93.3		1.16
	Carbamazepine	106	87.3	90.1		3.20
	Clothianidin	121	123	116		5.50
	Dinotefuran	96.3	112	99.9		11.6
	Diuron	80.6	53.8	59.2		9.59
	Endothall	89.0	80.8	77.0		4.83
	Fenuron	102	81.8	86.5		5.63
	Fluridone	97.4	83.7	82.1		1.94
	Glufosinate	101	104	103		0.584
	Glyphosate	80.1	63.7	67.4		5.70
	Hydrocodone	114	121	116		4.41
	Ibuprofen	77.5	68.8	70.6		2.54
	Imazapyr	87.4	82.4	83.7		1.53
	Imidacloprid	118	169	160		5.22
	Linuron	80.4	65.7	65.5		0.364
	Mandestrobin	102	90.7	89.2		1.66
	MCPP	113	91.9	92.0		0.161
	Naproxen	68.8	55.5	65.4		16.4
	Primidone	103	95.7	102		6.09
	Pyraclostrobin	83.7	87.0	87.9		0.979
	Sucralose	101	97.9	99.4		1.49
	Thiamethoxam	125	163	153		6.43
	Tolfenpyrad	52.6	55.4	63.0		12.8
	Triclopyr	103	75.5	80.6		6.59

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2233629
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2233629

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/25/2021	03/26/2021 10:30	Rebecca Ware	03/26/2021 16:43	Rebecca Ware	2233629
	03/25/2021	03/26/2021 10:30	Rebecca Ware	04/05/2021 17:15	Rebecca Ware	2233629
	03/25/2021	03/29/2021 10:00	Hoor Shaik	03/30/2021 00:32	Juyoung Kim	2233629