

Chemical Analysis Report

SO-DIST-2021-05-21-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

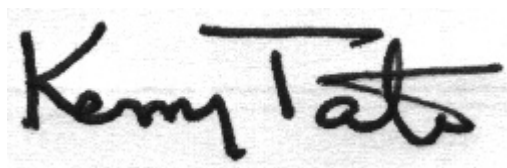
Event Description: **2021 SMP: Lee County Sampling**
Request ID: **RQ-2021-05-17-74**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Fort Myers, FL 33901-3381
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 01-JUN-2021 11:00

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

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: 10MIGRIO

Collection Date/Time: 05/20/2021 09:00

Field ID: 10MIGRIO

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2249176	EPA 8321B	Acesulfame K	0.10	U	ug/L	P398627	
		2,4-D	0.0022	I	ug/L	P398662	
		2,4,5-T	0.0040	U	ug/L	P398662	
		AMPA	0.10	UJ	ug/L	P398627	SUR
		Sucralose	0.27		ug/L	P398627	
		Acetaminophen	0.0080	U	ug/L	P398662	RPD
		Endothall	0.25	U	ug/L	P398627	
		Acetamiprid	0.0020	U	ug/L	P398662	
		Glufosinate	0.10	UJ	ug/L	P398627	SUR
		Glyphosate	0.10	UJ	ug/L	P398627	SUR
		Afidopyropen	0.0020	U	ug/L	P398662	
		Bentazon	0.077		ug/L	P398662	
		Benzovindiflupyr	0.0020	U	ug/L	P398662	
		Carbamazepine	0.0015	I	ug/L	P398662	
		Clothianidin	0.0020	U	ug/L	P398662	
		Dinotefuran	0.0020	U	ug/L	P398662	
		Diuron	0.0020	U	ug/L	P398662	
		Fenuron	0.016	U	ug/L	P398662	
		Fluridone	0.051		ug/L	P398662	
		Imazapyr	0.041		ug/L	P398662	
		Hydrocodone	0.0020	U	ug/L	P398662	
		Ibuprofen	0.020	U	ug/L	P398662	
		Imidacloprid	0.0028	I	ug/L	P398662	
		Linuron	0.0040	U	ug/L	P398662	
		Mandestrobin	0.0020	U	ug/L	P398662	
		MCPP	0.0020	U	ug/L	P398662	
		Naproxen	0.0080	U	ug/L	P398662	
		Primidone	0.0040	U	ug/L	P398662	
		Pyraclostrobin	0.0020	U	ug/L	P398662	
		Thiamethoxam	0.0020	U	ug/L	P398662	
		Tolfenpyrad	0.0020	U	ug/L	P398662	
		Triclopyr	0.0040	U	ug/L	P398662	

Ref. Method and Comment:

EPA 8321B: Results confirmed in re-extraction. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P398627

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: P398662

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P398627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	69.2		P	40 - 150
AMPA	102		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	97.6		P	40 - 150
Glyphosate	99.7		P	40 - 140
Sucralose	123		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P398662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	108		P	40 - 150
2,4,5-T	125		P	40 - 150
Acetaminophen	95.5		P	30 - 150
Acetamiprid	89.1		P	40 - 150
Afidopyropen	65.4		P	40 - 150
Bentazon	109		P	30 - 150
Benzovindiflupyr	95.4		P	40 - 150
Carbamazepine	88.9		P	40 - 150
Clothianidin	99.7		P	40 - 150
Dinotefuran	96.5		P	40 - 150
Diuron	81.6		P	40 - 150
Fenuron	124		P	40 - 150
Fluridone	94.5		P	40 - 150
Hydrocodone	87.3		P	40 - 150
Ibuprofen	74.8		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	95.0		P	40 - 150
Linuron	80.3		P	40 - 150
Mandestrobin	92.6		P	40 - 150
MCPP	142		P	40 - 150
Naproxen	75.9		P	40 - 150
Primidone	107		P	40 - 150
Pyraclostrobin	85.8		P	40 - 150
Thiamethoxam	91.5		P	40 - 150
Tolfenpyrad	43.5		P	40 - 150
Triclopyr	126		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P398627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248597	Acesulfame K	82.6	89.6	P/P	40 - 150
2248597	AMPA	124	131	P/P	40 - 150
2248597	Endothall	88.4	96.4	P/P	40 - 150
2248597	Glufosinate	99.1	106	P/P	40 - 150
2248597	Glyphosate	90.4	96.5	P/P	40 - 140
2248597	Sucralose	126	132	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P398662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248252	2,4-D	139	129	P/P	40 - 150
2248252	2,4,5-T	131	132	P/P	40 - 150
2248252	Acetaminophen	144	96.5	P/P	30 - 150
2248252	Acetamiprid	108	113	P/P	40 - 150
2248252	Afidopyropen	78.7	73.4	P/P	40 - 150
2248252	Bentazon	95.8	90.3	P/P	30 - 150
2248252	Benzovindiflupyr	97.8	94.0	P/P	40 - 150
2248252	Carbamazepine	91.5	84.3	P/P	40 - 150
2248252	Clothianidin	104	98.9	P/P	40 - 150
2248252	Dinotefuran	123	117	P/P	40 - 150
2248252	Diuron	63.7	67.7	P/P	40 - 150
2248252	Fenuron	116	117	P/P	40 - 150
2248252	Fluridone	99.4	90.0	P/P	40 - 150
2248252	Hydrocodone	97.9	95.4	P/P	40 - 150
2248252	Ibuprofen	76.4	60.4	P/P	40 - 150
2248252	Imazapyr	122	116	P/P	40 - 150
2248252	Imidacloprid	146	142	P/P	40 - 150
2248252	Linuron	70.6	68.5	P/P	40 - 150
2248252	Mandestrobin	89.4	87.8	P/P	40 - 150
2248252	MCP	144	146	P/P	40 - 150
2248252	Naproxen	75.3	86.7	P/P	40 - 150
2248252	Primidone	101	108	P/P	40 - 150
2248252	Pyraclostrobin	83.7	70.4	P/P	40 - 150
2248252	Thiamethoxam	117	112	P/P	40 - 150
2248252	Tolfenpyrad	49.1	51.7	P/P	40 - 150
2248252	Triclopyr	120	140	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P398627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248597	Acesulfame K	8.17	Spike	P	0 - 30
2248597	AMPA	5.33	Spike	P	0 - 30
2248597	Endothall	8.70	Spike	P	0 - 30
2248597	Glufosinate	6.42	Spike	P	0 - 30
2248597	Glyphosate	6.44	Spike	P	0 - 30
2248597	Sucralose	4.40	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P398662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248252	2,4-D	7.81	Spike	P	0 - 30
2248252	2,4,5-T	0.896	Spike	P	0 - 30
2248252	Acetaminophen	39.5	Spike	F	0 - 30
2248252	Acetamiprid	4.29	Spike	P	0 - 30
2248252	Afidopyropen	6.96	Spike	P	0 - 30
2248252	Bentazon	5.90	Spike	P	0 - 30
2248252	Benzovindiflupyr	3.94	Spike	P	0 - 30
2248252	Carbamazepine	8.22	Spike	P	0 - 30
2248252	Clothianidin	3.88	Spike	P	0 - 30
2248252	Dinotefuran	4.38	Spike	P	0 - 30
2248252	Diuron	6.23	Spike	P	0 - 30
2248252	Fenuron	0.443	Spike	P	0 - 30
2248252	Fluridone	9.93	Spike	P	0 - 30
2248252	Hydrocodone	2.63	Spike	P	0 - 30
2248252	Ibuprofen	23.4	Spike	P	0 - 30
2248252	Imazapyr	5.62	Spike	P	0 - 30
2248252	Imidacloprid	2.61	Spike	P	0 - 30
2248252	Linuron	3.01	Spike	P	0 - 30
2248252	Mandestrobin	1.84	Spike	P	0 - 30
2248252	MCPP	1.52	Spike	P	0 - 30
2248252	Naproxen	14.0	Spike	P	0 - 30
2248252	Primidone	7.10	Spike	P	0 - 30
2248252	Pyraclostrobin	17.3	Spike	P	0 - 30
2248252	Thiamethoxam	4.81	Spike	P	0 - 30
2248252	Tolfenpyrad	5.22	Spike	P	0 - 30
2248252	Triclopyr	15.7	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2249176

Field Sample ID: 10MIGRIO

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.3	P	30 - 160
EPA 8321B	Diuron-d6	54.3	P	30 - 160
EPA 8321B	Endothall-d6	75.1	P	30 - 160
EPA 8321B	Endothall-d6	75.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	2.66	F	40 - 160
EPA 8321B	Glyphosate 13C 15N	2.66	F	40 - 160
EPA 8321B	Ibuprofen-d3	72.9	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	64.3	P	30 - 160
EPA 8321B	Sucralose-d6	64.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A105616
 Included Lab Sample IDs: 2249176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	66.7	64.2	P/P	60 - 160
Endothall	105	102	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A105625
 Included Lab Sample IDs: 2249176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	116	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A105627
 Included Lab Sample IDs: 2249176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	124	103	P/P	60 - 160
Glufosinate	107	102	P/P	60 - 160
Glyphosate	107	106	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A105752
 Included Lab Sample IDs: 2249176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	91.1	P/P	50 - 150
2,4,5-T	88.4	61.9	P/P	50 - 150
Acetaminophen	91.3	87.8	P/P	60 - 160
Acetamiprid	96.6	99.6	P/P	50 - 150
Afidopyropen	79.5	61.5	P/P	50 - 150
Bentazon	119	105	P/P	50 - 160
Benzovindiflupyr	87.2	65.9	P/P	50 - 150
Carbamazepine	86.5	85.0	P/P	60 - 150
Clothianidin	98.3	91.6	P/P	60 - 150
Dinotefuran	100	98.6	P/P	50 - 150
Diuron	87.5	80.7	P/P	60 - 160
Fenuron	103	102	P/P	60 - 150
Fluridone	87.4	66.0	P/P	60 - 160
Hydrocodone	103	98.2	P/P	60 - 150
Ibuprofen	99.2	65.6	P/P	50 - 160
Imazapyr	100	108	P/P	50 - 150
Imidacloprid	92.5	88.2	P/P	60 - 150
Linuron	82.7	64.3	P/P	60 - 150
Mandestrobin	89.5	60.5	P/P	50 - 150
MCPP	89.2	61.0	P/P	50 - 150
Naproxen	93.2	76.3	P/P	50 - 160
Primidone	98.7	95.5	P/P	60 - 150
Pyraclostrobin	85.4	61.2	P/P	60 - 150
Thiamethoxam	95.3	91.8	P/P	50 - 150
Tolfenpyrad	82.7	65.3	P/P	60 - 150
Triclopyr	91.8	71.3	P/P	50 - 150

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		Precision LCS	SMP	MS
EPA 8321B	2,4-D	108	139	129			7.81
	2,4,5-T	125	131	132			0.896
	Acesulfame K	69.2	82.6	89.6			8.17
	Acetaminophen	95.5	144	96.5			39.5
	Acetamiprid	89.1	108	113			4.29
	Afidopyropen	65.4	78.7	73.4			6.96
	AMPA	102	124	131			5.33
	Bentazon	109	95.8	90.3			5.90
	Benzovindiflupyr	95.4	97.8	94.0			3.94
	Carbamazepine	88.9	91.5	84.3			8.22
	Clothianidin	99.7	104	98.9			3.88
	Dinotefuran	96.5	123	117			4.38
	Diuron	81.6	63.7	67.7			6.23
	Endothall	109	88.4	96.4			8.70
	Fenuron	124	116	117			0.443
	Fluridone	94.5	99.4	90.0			9.93
	Glufosinate	97.6	99.1	106			6.42
	Glyphosate	99.7	90.4	96.5			6.44
	Hydrocodone	87.3	97.9	95.4			2.63
	Ibuprofen	74.8	76.4	60.4			23.4
	Imazapyr	102	122	116			5.62
	Imidacloprid	95.0	146	142			2.61
	Linuron	80.3	70.6	68.5			3.01
	Mandestrobin	92.6	89.4	87.8			1.84
	MCPP	142	144	146			1.52
	Naproxen	75.9	75.3	86.7			14.0
	Primidone	107	101	108			7.10
	Pyraclostrobin	85.8	83.7	70.4			17.3
	Sucralose	123	126	132			4.40
	Thiamethoxam	91.5	117	112			4.81
	Tolfenpyrad	43.5	49.1	51.7			5.22
	Triclopyr	126	120	140			15.7

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2249176
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2249176

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/21/2021	05/24/2021 08:30	Pramila Ghimire	05/24/2021 12:52	Pramila Ghimire	2249176
	05/21/2021	05/24/2021 08:30	Pramila Ghimire	05/24/2021 13:34	Juyoung Kim	2249176
	05/21/2021	05/24/2021 08:30	Pramila Ghimire	05/24/2021 20:51	Pramila Ghimire	2249176
	05/21/2021	05/25/2021 09:00	Hoor Shaik	05/27/2021 14:44	Juyoung Kim	2249176
	05/21/2021	05/25/2021 09:00	Hoor Shaik	05/27/2021 19:21	Juyoung Kim	2249176