

Chemical Analysis Report

SO-DIST-2021-04-08-01

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

Event Description: **2021 SMP : Sarasota Cricks**
Request ID: **RQ-2021-04-05-65**
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
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-APR-2021 15:36

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 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: South Creek near Legacy

Collection Date/Time: 04/07/2021 11:30

Field ID: G3SD0183

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2237648	EPA 8276	Chlordane	5.5	U	ng/L	P396268	
		Toxaphene	33	U	ng/L	P396268	
2237649	EPA 8321B	2,4-D	0.025		ug/L	P396177	
		Acesulfame K	1.0	U	ug/L	P396251	MS
		2,4,5-T	0.0040	U	ug/L	P396177	
		AMPA	1.0	U	ug/L	P396251	MS
		Sucralose	8.1		ug/L	P396251	
		Acetaminophen	0.0080	U	ug/L	P396177	
		Acetamiprid	0.0020	U	ug/L	P396177	
		Endothall	2.5	U	ug/L	P396251	MS
		Glufosinate	1.0	U	ug/L	P396251	
		Glyphosate	1.0	U	ug/L	P396251	MS
		Afidopyropen	0.0020	U	ug/L	P396177	
		Bentazon	0.022		ug/L	P396177	
		Benzovindiflupyr	0.0020	U	ug/L	P396177	
		Carbamazepine	0.012		ug/L	P396177	
		Clothianidin	0.0020	U	ug/L	P396177	
		Dinotefuran	0.0020	U	ug/L	P396177	
		Diuron	0.0020	U	ug/L	P396177	
		Fenuron	0.016	U	ug/L	P396177	
		Fluridone	0.034		ug/L	P396177	
		Imazapyr	0.32		ug/L	P396177	
		Hydrocodone	0.0020	U	ug/L	P396177	
		Ibuprofen	0.020	U	ug/L	P396177	
		Imidacloprid	0.0046	I	ug/L	P396177	
		Linuron	0.0040	U	ug/L	P396177	
		Mandestrobin	0.0020	U	ug/L	P396177	
		MCPP	0.0020	U	ug/L	P396177	
		Naproxen	0.0080	U	ug/L	P396177	
		Primidone	0.037		ug/L	P396177	
		Pyraclostrobin	0.0020	U	ug/L	P396177	
		Thiamethoxam	0.0020	U	ug/L	P396177	
		Tolfenpyrad	0.0020	U	ug/L	P396177	
		Triclopyr	0.0040	U	ug/L	P396177	

Ref. Method and Comment:
 EPA 8321B: MDL for some parameters elevated due to matrix interference.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276

Batch ID: P396268

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B

Batch ID: P396177

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: P396251

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 8276
Batch ID: P396268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	101	103	P/P	56 - 117
Toxaphene	83.4	81.1	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P396177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
2,4,5-T	118		P	30 - 160
Acetaminophen	90.5		P	30 - 160
Acetamiprid	107		P	30 - 160
Afidopyropen	73.7		P	30 - 160
Bentazon	113		P	30 - 160
Benzovindiflupyr	82.6		P	30 - 160
Carbamazepine	105		P	30 - 160
Clothianidin	104		P	30 - 160
Dinotefuran	95.9		P	30 - 160
Diuron	71.6		P	30 - 160
Fenuron	90.6		P	30 - 160
Fluridone	104		P	30 - 160
Hydrocodone	115		P	30 - 160
Ibuprofen	89.3		P	30 - 160
Imazapyr	86.3		P	30 - 160
Imidacloprid	105		P	30 - 160
Linuron	82.9		P	30 - 160
Mandestrobin	90.7		P	30 - 160
MCPP	134		P	30 - 160
Naproxen	71.6		P	30 - 160
Primidone	98.4		P	30 - 160
Pyraclostrobin	73.3		P	30 - 160
Thiamethoxam	85.6		P	30 - 160
Tolfenpyrad	52.9		P	30 - 160
Triclopyr	114		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P396251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
AMPA	144		P	40 - 150
Endothall	83.9		P	40 - 150
Glufosinate	147		P	40 - 150
Glyphosate	140		P	40 - 140
Sucralose	90.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P396268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238383	Chlordane	110	112	P/P	47 - 128
2238383	Toxaphene	77.7	73.9	P/P	11 - 163

Reference Method: EPA 8321B

Batch ID: P396177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237202	2,4-D	137	143	P/P	30 - 160
2237202	2,4,5-T	114	115	P/P	30 - 160
2237202	Acetaminophen	106	107	P/P	30 - 160
2237202	Acetamiprid	108	115	P/P	30 - 160
2237202	Afidopyropen	93.4	99.7	P/P	30 - 160
2237202	Bentazon	95.4	105	P/P	30 - 160
2237202	Benzovindiflupyr	82.3	89.4	P/P	30 - 160
2237202	Carbamazepine	107	113	P/P	30 - 160
2237202	Clothianidin	118	109	P/P	30 - 160
2237202	Dinotefuran	115	114	P/P	30 - 160
2237202	Diuron	69.9	73.3	P/P	30 - 160
2237202	Fenuron	82.7	76.0	P/P	30 - 160
2237202	Fluridone	111	114	P/P	30 - 160
2237202	Hydrocodone	124	131	P/P	30 - 160
2237202	Ibuprofen	81.6	93.2	P/P	30 - 160
2237202	Imazapyr	79.6	86.2	P/P	30 - 160
2237202	Imidacloprid	119	127	P/P	30 - 160
2237202	Linuron	73.7	80.9	P/P	30 - 160
2237202	Mandestrobin	92.0	96.5	P/P	30 - 160
2237202	MCPP	132	139	P/P	30 - 160
2237202	Naproxen	74.4	93.3	P/P	30 - 160
2237202	Primidone	103	105	P/P	30 - 160
2237202	Pyraclostrobin	74.7	82.5	P/P	30 - 160
2237202	Thiamethoxam	124	126	P/P	30 - 160
2237202	Tolfenpyrad	50.4	53.3	P/P	30 - 160
2237202	Triclopyr	110	119	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237265	Acesulfame K	146	170	P/F	40 - 150
2237265	AMPA	166	161	F/F	40 - 150
2237265	Endothall	206	228	F/F	40 - 150
2237265	Glufosinate	140	134	P/P	40 - 150
2237265	Glyphosate	136	146	P/F	40 - 140
2237265	Sucralose	93.4	94.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8276
 Batch ID: P396268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238383	Chlordane	1.66	Spike	P	0 - 30
2238383	Toxaphene	5.02	Spike	P	0 - 30
LFB	Chlordane	2.07	LCS	P	0 - 30
LFB	Toxaphene	2.80	LCS	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P396177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237202	2,4-D	4.22	Spike	P	0 - 30
2237202	2,4,5-T	1.23	Spike	P	0 - 30
2237202	Acetaminophen	1.07	Spike	P	0 - 30
2237202	Acetamiprid	6.02	Spike	P	0 - 30
2237202	Afidopyropen	6.54	Spike	P	0 - 30
2237202	Bentazon	8.36	Spike	P	0 - 30
2237202	Benzovindiflupyr	8.24	Spike	P	0 - 30
2237202	Carbamazepine	5.35	Spike	P	0 - 30
2237202	Clothianidin	7.33	Spike	P	0 - 30
2237202	Dinotefuran	1.26	Spike	P	0 - 30
2237202	Diuron	4.77	Spike	P	0 - 30
2237202	Fenuron	8.42	Spike	P	0 - 30
2237202	Fluridone	2.48	Spike	P	0 - 30
2237202	Hydrocodone	5.20	Spike	P	0 - 30
2237202	Ibuprofen	13.3	Spike	P	0 - 30
2237202	Imazapyr	7.21	Spike	P	0 - 30
2237202	Imidacloprid	7.21	Spike	P	0 - 30
2237202	Linuron	9.41	Spike	P	0 - 30
2237202	Mandestrobin	4.78	Spike	P	0 - 30
2237202	MCP	4.98	Spike	P	0 - 30
2237202	Naproxen	22.6	Spike	P	0 - 30
2237202	Primidone	1.98	Spike	P	0 - 30
2237202	Pyraclostrobin	9.89	Spike	P	0 - 30
2237202	Thiamethoxam	2.15	Spike	P	0 - 30
2237202	Tolfenpyrad	5.66	Spike	P	0 - 30
2237202	Triclopyr	7.69	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P396251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237265	Acesulfame K	15.1	Spike	P	0 - 30
2237265	AMPA	3.19	Spike	P	0 - 30
2237265	Endothall	10.4	Spike	P	0 - 30
2237265	Glufosinate	4.01	Spike	P	0 - 30
2237265	Glyphosate	6.92	Spike	P	0 - 30
2237265	Sucralose	1.26	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2237648
Field Sample ID: G3SD0183

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	61.2	P	29 - 92.0
EPA 8276	PCNB	68.9	P	43 - 134

Lab Sample ID: 2237649
Field Sample ID: G3SD0183

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	143	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.2	P	30 - 160
EPA 8321B	Diuron-d6	60.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	40 - 160
EPA 8321B	Endothall-d6	109	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	110	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	110	P	40 - 160
EPA 8321B	Ibuprofen-d3	87.6	P	30 - 160
EPA 8321B	Primidone-d5	108	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A104605
Included Lab Sample IDs: 2237649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.1	105	P/P	50 - 150
2,4,5-T	101	103	P/P	50 - 150
Acetaminophen	89.0	100	P/P	60 - 160
Acetamiprid	135	129	P/P	50 - 150
Afidopyropen	117	117	P/P	50 - 150
Bentazon	139	125	P/P	50 - 160
Benzovindiflupyr	108	108	P/P	50 - 160
Carbamazepine	127	142	P/P	60 - 150
Clothianidin	124	144	P/P	60 - 150
Dinotefuran	98.5	127	P/P	50 - 150
Diuron	121	130	P/P	60 - 160
Fenuron	107	117	P/P	60 - 150
Fluridone	131	133	P/P	60 - 160
Hydrocodone	123	113	P/P	60 - 150
Ibuprofen	96.3	96.4	P/P	50 - 160
Imazapyr	110	110	P/P	50 - 160
Imidacloprid	101	116	P/P	60 - 150
Linuron	113	117	P/P	60 - 150
Mandestrobin	119	117	P/P	50 - 150
MCPP	96.4	100	P/P	50 - 150
Naproxen	94.3	104	P/P	50 - 160
Primidone	115	117	P/P	60 - 150
Pyraclostrobin	107	114	P/P	60 - 150
Thiamethoxam	116	133	P/P	50 - 150
Tolfenpyrad	115	113	P/P	60 - 150
Triclopyr	98.3	108	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A104697
Included Lab Sample IDs: 2237649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	71.5	89.4	P/P	40 - 160
AMPA	110	100	P/P	40 - 160
Endothall	65.0	68.8	P/P	40 - 160
Glufosinate	98.8	98.7	P/P	40 - 160
Glyphosate	116	115	P/P	40 - 160

Reference Method: EPA 8321B
Run ID: A104794
Included Lab Sample IDs: 2237649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.9	92.8	P/P	60 - 160

Reference Method: EPA 8276
Run ID: A104811
Included Lab Sample IDs: 2237648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.6		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A104811
Included Lab Sample IDs: 2237648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Toxaphene	104		P	80 - 120

* 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 8276	Chlordane	101	103	110	112	2.07		1.66
	Toxaphene	83.4	81.1	77.7	73.9	2.80		5.02
EPA 8321B	2,4-D	127		137	143			4.22
	2,4,5-T	118		114	115			1.23
	Acesulfame K	122		146	170			15.1
	Acetaminophen	90.5		106	107			1.07
	Acetamiprid	107		108	115			6.02
	Afidopyropen	73.7		93.4	99.7			6.54
	AMPA	144		166	161			3.19
	Bentazon	113		95.4	105			8.36
	Benzovindiflupyr	82.6		82.3	89.4			8.24
	Carbamazepine	105		107	113			5.35
	Clothianidin	104		118	109			7.33
	Dinotefuran	95.9		115	114			1.26
	Diuron	71.6		69.9	73.3			4.77
	Endothall	83.9		206	228			10.4
	Fenuron	90.6		82.7	76.0			8.42
	Fluridone	104		111	114			2.48
	Glufosinate	147		140	134			4.01
	Glyphosate	140		136	146			6.92
	Hydrocodone	115		124	131			5.20
	Ibuprofen	89.3		81.6	93.2			13.3
	Imazapyr	86.3		79.6	86.2			7.21
	Imidacloprid	105		119	127			7.21
	Linuron	82.9		73.7	80.9			9.41
	Mandestrobin	90.7		92.0	96.5			4.78
	MCPP	134		132	139			4.98
	Naproxen	71.6		74.4	93.3			22.6
	Primidone	98.4		103	105			1.98
	Pyraclostrobin	73.3		74.7	82.5			9.89
	Sucralose	90.0		93.4	94.6			1.26
	Thiamethoxam	85.6		124	126			2.15
	Tolfenpyrad	52.9		50.4	53.3			5.66
	Triclopyr	114		110	119			7.69

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2237648
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2237649
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2237649

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8276	04/08/2021	04/13/2021 08:00	Fe-Val Siddell	04/16/2021 07:20	Chiran X. Ghimire	2237648
EPA 8321B	04/08/2021	04/09/2021 09:00	Hoor Shaik	04/10/2021 13:39	Juyoung Kim	2237649
	04/08/2021	04/09/2021 11:00	Rebecca Ware	04/12/2021 14:15	Rebecca Ware	2237649
	04/08/2021	04/09/2021 11:00	Rebecca Ware	04/16/2021 18:13	Mohammad Ghaffari	2237649