

Chemical Analysis Report

CEN-DIST-2021-06-30-01

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

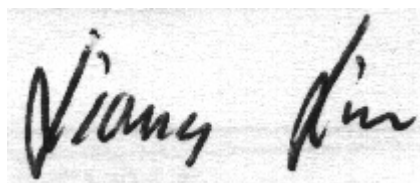
Event Description: **Reedy Creek (1685)**
Request ID: **RQ-2021-06-21-12**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUL-2021 17:29

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: Livingston Creek @ Rucks Dairy Rd

Collection Date/Time: 06/29/2021 12:40

Field ID: G4CE0194

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258016	EPA 8321B	2,4-D	0.0020	U	ug/L	P400469	
		Acesulfame K	0.10	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400469	
		AMPA	0.10	U	ug/L	P400314	
		Acetaminophen	0.0080	U	ug/L	P400469	
		Acetamiprid	0.0020	U	ug/L	P400469	
		Endothall	0.25	U	ug/L	P400314	
		Glufosinate	0.10	U	ug/L	P400314	
		Glyphosate	0.10	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400469	
		Bentazon	8.0E-04	U	ug/L	P400469	
		Sucralose	0.11		ug/L	P400314	
		Benzovindiflupyr	0.0020	U	ug/L	P400469	
		Carbamazepine	8.0E-04	U	ug/L	P400469	
		Clothianidin	0.0020	U	ug/L	P400469	
		Dinotefuran	0.0020	U	ug/L	P400469	
		Diuron	0.0020	U	ug/L	P400469	
		Fenuron	0.016	U	ug/L	P400469	
		Fluridone	8.0E-04	U	ug/L	P400469	
		Imazapyr	0.0073	I	ug/L	P400469	
		Hydrocodone	0.0020	U	ug/L	P400469	
		Ibuprofen	0.020	U	ug/L	P400469	
		Imidacloprid	0.072	J	ug/L	P400469	MS
		Linuron	0.0040	U	ug/L	P400469	
		Mandestrobin	0.0020	U	ug/L	P400469	
		MCPP	0.0020	I	ug/L	P400469	
		Naproxen	0.0080	U	ug/L	P400469	
		Primidone	0.0040	U	ug/L	P400469	
		Pyraclostrobin	0.0020	U	ug/L	P400469	
		Thiamethoxam	0.0022	I J	ug/L	P400469	MS
		Tolfenpyrad	0.0020	U	ug/L	P400469	
		Triclopyr	0.0040	U	ug/L	P400469	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P400314

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: P400469

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: P400314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.8		P	40 - 150
AMPA	97.0		P	40 - 150
Endothall	97.7		P	40 - 150
Glufosinate	93.3		P	40 - 150
Glyphosate	96.5		P	40 - 150
Sucralose	85.2		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P400469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	88.8		P	40 - 150
Acetaminophen	91.0		P	30 - 150
Acetamiprid	75.9		P	40 - 150
Afidopyropen	78.3		P	40 - 150
Bentazon	115		P	30 - 150
Benzovindiflupyr	83.0		P	40 - 150
Carbamazepine	90.2		P	40 - 150
Clothianidin	88.8		P	40 - 150
Dinotefuran	82.7		P	40 - 150
Diuron	73.3		P	40 - 150
Fenuron	87.3		P	40 - 150
Fluridone	87.1		P	40 - 150
Hydrocodone	81.5		P	40 - 150
Ibuprofen	85.2		P	40 - 150
Imazapyr	92.9		P	40 - 150
Imidacloprid	94.3		P	40 - 150
Linuron	64.3		P	40 - 150
Mandestrobin	79.4		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	123		P	40 - 150
Primidone	62.4		P	40 - 150
Pyraclostrobin	80.5		P	40 - 150
Thiamethoxam	93.4		P	40 - 150
Tolfenpyrad	50.5		P	30 - 150
Triclopyr	87.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P400314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257607	Acesulfame K	78.8	87.6	P/P	40 - 150
2257607	AMPA	85.0	82.9	P/P	40 - 150
2257607	Endothall	93.9	93.7	P/P	40 - 150
2257607	Glufosinate	86.9	89.2	P/P	40 - 150
2257607	Glyphosate	91.4	82.6	P/P	40 - 150
2257607	Sucralose	80.9	85.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P400469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258016	2,4-D	111	115	P/P	40 - 150
2258016	2,4,5-T	118	102	P/P	40 - 150
2258016	Acetaminophen	125	106	P/P	30 - 150
2258016	Acetamiprid	96.2	76.6	P/P	40 - 150
2258016	Afidopyropen	43.0	40.8	P/P	40 - 150
2258016	Bentazon	88.1	84.4	P/P	30 - 150
2258016	Benzovindiflupyr	80.1	64.9	P/P	40 - 150
2258016	Carbamazepine	105	98.4	P/P	40 - 150
2258016	Clothianidin	125	117	P/P	40 - 150
2258016	Dinotefuran	127	105	P/P	40 - 150
2258016	Diuron	87.6	80.3	P/P	40 - 150
2258016	Fenuron	90.1	84.1	P/P	40 - 150
2258016	Fluridone	84.7	76.1	P/P	40 - 150
2258016	Hydrocodone	118	106	P/P	40 - 150
2258016	Ibuprofen	75.0	81.1	P/P	40 - 150
2258016	Imazapyr	149	128	P/P	40 - 150
2258016	Imidacloprid	206	191	F/F	40 - 150
2258016	Linuron	86.5	74.3	P/P	40 - 150
2258016	Mandestrobin	86.5	81.5	P/P	40 - 150
2258016	MCP	131	107	P/P	40 - 150
2258016	Naproxen	131	128	P/P	40 - 150
2258016	Primidone	98.1	104	P/P	40 - 150
2258016	Pyraclostrobin	76.2	67.4	P/P	40 - 150
2258016	Thiamethoxam	174	153	F/F	40 - 150
2258016	Tolfenpyrad	58.5	53.5	P/P	30 - 150
2258016	Triclopyr	119	110	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P400314

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257607	Acesulfame K	9.91	Spike	P	0 - 30
2257607	AMPA	2.21	Spike	P	0 - 30
2257607	Endothall	0.197	Spike	P	0 - 30
2257607	Glufosinate	2.64	Spike	P	0 - 30
2257607	Glyphosate	9.03	Spike	P	0 - 30
2257607	Sucralose	5.32	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P400469

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258016	2,4-D	3.51	Spike	P	0 - 30
2258016	2,4,5-T	15.0	Spike	P	0 - 30
2258016	Acetaminophen	15.9	Spike	P	0 - 30
2258016	Acetamiprid	22.6	Spike	P	0 - 30
2258016	Afidopyropen	5.24	Spike	P	0 - 30
2258016	Bentazon	4.36	Spike	P	0 - 30
2258016	Benzovindiflupyr	21.0	Spike	P	0 - 30
2258016	Carbamazepine	6.92	Spike	P	0 - 30
2258016	Clothianidin	6.15	Spike	P	0 - 30
2258016	Dinotefuran	19.0	Spike	P	0 - 30
2258016	Diuron	8.61	Spike	P	0 - 30
2258016	Fenuron	6.91	Spike	P	0 - 30
2258016	Fluridone	10.7	Spike	P	0 - 30
2258016	Hydrocodone	11.3	Spike	P	0 - 30
2258016	Ibuprofen	7.81	Spike	P	0 - 30
2258016	Imazapyr	14.0	Spike	P	0 - 30
2258016	Imidacloprid	5.16	Spike	P	0 - 30
2258016	Linuron	15.1	Spike	P	0 - 30
2258016	Mandestrobin	5.98	Spike	P	0 - 30
2258016	MCPP	19.7	Spike	P	0 - 30
2258016	Naproxen	2.81	Spike	P	0 - 30
2258016	Primidone	6.22	Spike	P	0 - 30
2258016	Pyraclostrobin	12.3	Spike	P	0 - 30
2258016	Thiamethoxam	13.0	Spike	P	0 - 30
2258016	Tolfenpyrad	8.86	Spike	P	0 - 30
2258016	Triclopyr	7.54	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2258016

Field Sample ID: G4CE0194

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	89.6	P	30 - 160
EPA 8321B	Endothall-d6	80.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	69.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.6	P	30 - 160
EPA 8321B	Primidone-d5	91.6	P	30 - 160
EPA 8321B	Sucralose-d6	79.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A106404
 Included Lab Sample IDs: 2258016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	75.1	84.8	P/P	60 - 160
Glufosinate	78.5	84.8	P/P	60 - 160
Glyphosate	84.5	86.1	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A106461
 Included Lab Sample IDs: 2258016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.4	77.8	P/P	60 - 160
Endothall	71.1	75.1	P/P	60 - 160
Sucralose	75.8	71.0	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A106570
 Included Lab Sample IDs: 2258016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.7	89.4	P/P	50 - 150
2,4,5-T	92.3	107	P/P	50 - 150
Acetaminophen	99.0	101	P/P	60 - 160
Acetamiprid	105	108	P/P	50 - 150
Afidopyropen	99.0	106	P/P	50 - 150
Bentazon	113	108	P/P	50 - 160
Benzovindiflupyr	105	104	P/P	50 - 150
Carbamazepine	104	115	P/P	60 - 150
Clothianidin	109	116	P/P	60 - 150
Dinotefuran	101	103	P/P	50 - 150
Diuron	108	97.9	P/P	60 - 160
Fenuron	105	100	P/P	60 - 150
Fluridone	102	112	P/P	60 - 160
Hydrocodone	98.6	99.5	P/P	60 - 150
Ibuprofen	116	92.1	P/P	50 - 160
Imazapyr	124	106	P/P	50 - 150
Imidacloprid	103	107	P/P	60 - 150
Linuron	103	99.3	P/P	60 - 150
Mandestrobin	106	107	P/P	50 - 150
MCPP	86.2	96.3	P/P	50 - 150
Naproxen	110	78.9	P/P	50 - 160
Primidone	118	80.6	P/P	60 - 150
Pyraclostrobin	107	108	P/P	60 - 150
Thiamethoxam	94.9	108	P/P	50 - 150
Tolfenpyrad	99.7	106	P/P	60 - 150
Triclopyr	105	100	P/P	50 - 150

* 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	102	111	115		3.51
	2,4,5-T	88.8	118	102		15.0
	Acesulfame K	89.8	78.8	87.6		9.91
	Acetaminophen	91.0	125	106		15.9
	Acetamiprid	75.9	96.2	76.6		22.6
	Afidopyropen	78.3	43.0	40.8		5.24
	AMPA	97.0	85.0	82.9		2.21
	Bentazon	115	88.1	84.4		4.36
	Benzovindiflupyr	83.0	80.1	64.9		21.0
	Carbamazepine	90.2	105	98.4		6.92
	Clothianidin	88.8	125	117		6.15
	Dinotefuran	82.7	127	105		19.0
	Diuron	73.3	87.6	80.3		8.61
	Endothall	97.7	93.9	93.7		0.197
	Fenuron	87.3	90.1	84.1		6.91
	Fluridone	87.1	84.7	76.1		10.7
	Glufosinate	93.3	86.9	89.2		2.64
	Glyphosate	96.5	91.4	82.6		9.03
	Hydrocodone	81.5	118	106		11.3
	Ibuprofen	85.2	75.0	81.1		7.81
	Imazapyr	92.9	149	128		14.0
	Imidacloprid	94.3	206	191		5.16
	Linuron	64.3	86.5	74.3		15.1
	Mandestrobin	79.4	86.5	81.5		5.98
	MCPP	113	131	107		19.7
	Naproxen	123	131	128		2.81
	Primidone	62.4	98.1	104		6.22
	Pyraclostrobin	80.5	76.2	67.4		12.3
	Sucralose	85.2	80.9	85.6		5.32
	Thiamethoxam	93.4	174	153		13.0
	Tolfenpyrad	50.5	58.5	53.5		8.86
	Triclopyr	87.2	119	110		7.54

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2258016

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 19:25	Juyoung Kim	2258016
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 13:24	Pramila Ghimire	2258016
	06/30/2021	07/02/2021 14:00	Hoor Shaik	07/12/2021 19:48	Juyoung Kim	2258016