

Chemical Analysis Report

CEN-DIST-2021-04-27-01

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

Event Description: **Tributary to Econlockhatchee**
Request ID: **RQ-2021-04-12-14**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Colin Wright, Program Administrator

Date Certified: 10-MAY-2021 16:26

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light gray rectangular 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: Econ River Trib @ 170m N of Jay Blanchard Trail

Collection Date/Time: 04/26/2021 10:33

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2242748	EPA 8321B	2,4-D	0.12		ug/L	P397178	
		Acesulfame K	0.10	U	ug/L	P397199	
		2,4,5-T	0.0040	U	ug/L	P397178	
		AMPA	1.1		ug/L	P397199	
		Sucralose	0.33		ug/L	P397199	
		Acetaminophen	0.035		ug/L	P397178	
		Acetamiprid	0.0020	U	ug/L	P397178	
		Endothall	0.25	U	ug/L	P397199	
		Glufosinate	0.10	U	ug/L	P397199	
		Glyphosate	2.4		ug/L	P397199	
		Afidopyropen	0.0020	U	ug/L	P397178	
		Bentazon	0.042		ug/L	P397178	
		Benzovindiflupyr	0.0020	U	ug/L	P397178	
		Carbamazepine	8.0E-04	U	ug/L	P397178	
		Clothianidin	0.0028	I	ug/L	P397178	
		Dinotefuran	0.0026	I	ug/L	P397178	
		Diuron	0.0034	I	ug/L	P397178	
		Fenuron	0.016	U	ug/L	P397178	
		Fluridone	0.080		ug/L	P397178	
		Imazapyr	0.85		ug/L	P397178	
		Hydrocodone	0.0020	U	ug/L	P397178	
		Ibuprofen	0.020	UJ	ug/L	P397178	RPD
		Imidacloprid	0.0077	IJ	ug/L	P397178	MS
		Linuron	0.0040	U	ug/L	P397178	
		Mandestrobin	0.0020	U	ug/L	P397178	
		MCPP	0.0092	J	ug/L	P397178	MS
		Naproxen	0.0080	U	ug/L	P397178	
		Primidone	0.0040	U	ug/L	P397178	
		Pyraclostrobin	0.0020	U	ug/L	P397178	
		Thiamethoxam	0.0020	UJ	ug/L	P397178	MS
		Tolfenpyrad	0.0020	U	ug/L	P397178	
		Triclopyr	0.0040	U	ug/L	P397178	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P397178

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: P397199

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: P397178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	158		P	30 - 160
2,4,5-T	133		P	30 - 160
Acetaminophen	99.2		P	30 - 150
Acetamiprid	103		P	30 - 160
Afidopyropen	84.6		P	30 - 160
Bentazon	48.6		P	30 - 150
Benzovindiflupyr	104		P	30 - 160
Carbamazepine	106		P	30 - 160
Clothianidin	115		P	30 - 160
Dinotefuran	113		P	30 - 160
Diuron	78.6		P	30 - 160
Fenuron	112		P	30 - 160
Fluridone	122		P	30 - 160
Hydrocodone	123		P	30 - 160
Ibuprofen	109		P	30 - 160
Imazapyr	123		P	30 - 160
Imidacloprid	132		P	30 - 160
Linuron	83.7		P	30 - 160
Mandestrobin	91.4		P	30 - 160
MCPP	152		P	30 - 160
Naproxen	86.4		P	30 - 160
Primidone	101		P	30 - 160
Pyraclostrobin	90.8		P	30 - 160
Thiamethoxam	138		P	30 - 160
Tolfenpyrad	74.3		P	30 - 160
Triclopyr	150		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P397199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.2		P	40 - 150
AMPA	80.6		P	40 - 150
Endothall	87.2		P	40 - 150
Glufosinate	81.5		P	40 - 150
Glyphosate	98.4		P	40 - 140
Sucralose	106		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P397178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2242748	2,4,5-T	133	133	P/P	30 - 160
2242748	Acetaminophen	76.1	68.7	P/P	30 - 150
2242748	Acetamiprid	115	114	P/P	30 - 160
2242748	Afidopyropen	110	101	P/P	30 - 160
2242748	Benzovindiflupyr	99.0	92.5	P/P	30 - 160
2242748	Carbamazepine	97.1	90.2	P/P	30 - 160
2242748	Clothianidin	119	117	P/P	30 - 160
2242748	Dinotefuran	157	139	P/P	30 - 160
2242748	Diuron	65.3	59.4	P/P	30 - 160
2242748	Fenuron	110	100	P/P	30 - 160
2242748	Hydrocodone	125	121	P/P	30 - 160
2242748	Ibuprofen	102	70.2	P/P	30 - 160
2242748	Imidacloprid	240	219	F/F	30 - 160
2242748	Linuron	92.8	76.5	P/P	30 - 160
2242748	Mandestrobin	112	96.4	P/P	30 - 160
2242748	MCPP	167	157	F/P	30 - 160
2242748	Naproxen	97.7	79.2	P/P	30 - 160
2242748	Primidone	113	131	P/P	30 - 160
2242748	Pyraclostrobin	98.1	87.3	P/P	30 - 160
2242748	Thiamethoxam	193	190	F/F	30 - 160
2242748	Tolfenpyrad	74.2	73.5	P/P	30 - 160
2242748	Triclopyr	141	131	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P397199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241899	Acesulfame K	64.6	69.6	P/P	40 - 150
2241899	AMPA	97.2	103	P/P	40 - 150
2241899	Endothall	76.8	86.7	P/P	40 - 150
2241899	Glufosinate	95.4	93.6	P/P	40 - 150
2241899	Glyphosate	76.9	76.6	P/P	40 - 140
2241899	Sucralose	50.3	50.1	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P397178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2242748	2,4-D	13.1	Spike	P	0 - 30
2242748	2,4,5-T	0.240	Spike	P	0 - 30
2242748	Acetaminophen	6.34	Spike	P	0 - 30
2242748	Acetamiprid	1.15	Spike	P	0 - 30
2242748	Afidopyropen	8.41	Spike	P	0 - 30
2242748	Bentazon	10.0	Spike	P	0 - 30
2242748	Benzovindiflupyr	6.88	Spike	P	0 - 30
2242748	Carbamazepine	7.35	Spike	P	0 - 30
2242748	Clothianidin	1.46	Spike	P	0 - 30
2242748	Dinotefuran	12.2	Spike	P	0 - 30
2242748	Diuron	8.74	Spike	P	0 - 30
2242748	Fenuron	9.17	Spike	P	0 - 30
2242748	Fluridone	12.9	Spike	P	0 - 30
2242748	Hydrocodone	3.42	Spike	P	0 - 30
2242748	Ibuprofen	36.6	Spike	F	0 - 30
2242748	Imazapyr	21.2	Spike	P	0 - 30
2242748	Imidacloprid	8.57	Spike	P	0 - 30
2242748	Linuron	19.2	Spike	P	0 - 30
2242748	Mandestrobin	15.2	Spike	P	0 - 30
2242748	MCPP	5.72	Spike	P	0 - 30
2242748	Naproxen	20.9	Spike	P	0 - 30
2242748	Primidone	14.7	Spike	P	0 - 30
2242748	Pyraclostrobin	11.7	Spike	P	0 - 30
2242748	Thiamethoxam	1.55	Spike	P	0 - 30
2242748	Tolfenpyrad	0.894	Spike	P	0 - 30
2242748	Triclopyr	7.50	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P397199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241899	Acesulfame K	7.51	Spike	P	0 - 30
2241899	AMPA	5.48	Spike	P	0 - 30
2241899	Endothall	12.0	Spike	P	0 - 30
2241899	Glufosinate	1.99	Spike	P	0 - 30
2241899	Glyphosate	0.365	Spike	P	0 - 30
2241899	Sucralose	0.408	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2242748

Field Sample ID: G2CE0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.5	P	30 - 160
EPA 8321B	Diuron-d6	60.7	P	30 - 160
EPA 8321B	Endothall-d6	81.2	P	40 - 160
EPA 8321B	Endothall-d6	81.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	40 - 160
EPA 8321B	Ibuprofen-d3	90.6	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A105072
Included Lab Sample IDs: 2242748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.1	86.8	P/P	40 - 160
AMPA	72.0	73.5	P/P	40 - 160
Endothall	106	98.4	P/P	40 - 160
Glufosinate	79.0	73.7	P/P	40 - 160
Glyphosate	94.2	87.4	P/P	40 - 160

Reference Method: EPA 8321B
Run ID: A105083
Included Lab Sample IDs: 2242748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A105098
Included Lab Sample IDs: 2242748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	119	110	P/P	50 - 150
2,4,5-T	103	117	P/P	50 - 150
Acetaminophen	110	113	P/P	60 - 160
Acetamiprid	127	123	P/P	50 - 150
Afidopyropen	139	128	P/P	50 - 150
Bentazon	122	148	P/P	50 - 160
Benzovindiflupyr	128	122	P/P	50 - 160
Carbamazepine	123	125	P/P	60 - 150
Clothianidin	119	117	P/P	60 - 150
Dinotefuran	121	127	P/P	50 - 150
Diuron	98.0	121	P/P	60 - 160
Fenuron	108	111	P/P	60 - 150
Fluridone	133	129	P/P	60 - 160
Hydrocodone	124	138	P/P	60 - 150
Ibuprofen	107	96.1	P/P	50 - 160
Imazapyr	107	121	P/P	50 - 150
Imidacloprid	127	126	P/P	60 - 150
Linuron	104	112	P/P	60 - 150
Mandestrobin	119	115	P/P	50 - 150
MCPP	111	113	P/P	50 - 150
Naproxen	139	132	P/P	50 - 160
Primidone	127	130	P/P	60 - 150
Pyraclostrobin	116	127	P/P	60 - 150
Thiamethoxam	135	143	P/P	50 - 150
Tolfenpyrad	123	130	P/P	60 - 150
Triclopyr	110	118	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		LCS	Precision	MS
						SMP	
EPA 8321B	2,4-D	158					13.1
	2,4,5-T	133	133	133			0.240
	Acesulfame K	99.2	64.6	69.6			7.51
	Acetaminophen	99.2	76.1	68.7			6.34
	Acetamiprid	103	115	114			1.15
	Afidopyropen	84.6	110	101			8.41
	AMPA	80.6	97.2	103			5.48
	Bentazon	48.6					10.0
	Benzovindiflupyr	104	99.0	92.5			6.88
	Carbamazepine	106	97.1	90.2			7.35
	Clothianidin	115	119	117			1.46
	Dinotefuran	113	157	139			12.2
	Diuron	78.6	65.3	59.4			8.74
	Endothall	87.2	76.8	86.7			12.0
	Fenuron	112	110	100			9.17
	Fluridone	122					12.9
	Glufosinate	81.5	95.4	93.6			1.99
	Glyphosate	98.4	76.9	76.6			0.365
	Hydrocodone	123	125	121			3.42
	Ibuprofen	109	102	70.2			36.6
	Imazapyr	123					21.2
	Imidacloprid	132	240	219			8.57
	Linuron	83.7	92.8	76.5			19.2
	Mandestrobin	91.4	112	96.4			15.2
	MCPP	152	167	157			5.72
	Naproxen	86.4	97.7	79.2			20.9
	Primidone	101	113	131			14.7
	Pyraclostrobin	90.8	98.1	87.3			11.7
	Sucralose	106	50.3	50.1			0.408
	Thiamethoxam	138	193	190			1.55
	Tolfenpyrad	74.3	74.2	73.5			0.894
	Triclopyr	150	141	131			7.50

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2242748
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2242748

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/27/2021	04/27/2021 11:00	Rebecca Ware	04/28/2021 13:08	Rebecca Ware	2242748
	04/27/2021	04/27/2021 11:00	Rebecca Ware	04/29/2021 05:44	Rebecca Ware	2242748
	04/27/2021	04/28/2021 15:00	Hoor Shaik	05/01/2021 13:30	Juyoung Kim	2242748
	04/27/2021	04/28/2021 15:00	Hoor Shaik	05/04/2021 15:02	Juyoung Kim	2242748