

Chemical Analysis Report

NE-DIST-2022-05-27-01

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

Event Description: **Normandy Village investigation**
Request ID: **RQ-2022-05-23-49**
Customer: **NE-DIST**
Project ID: **DISTRICT**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 03-JUN-2022 18:29



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: NVU Ribs #2

Collection Date/Time: 05/26/2022 09:30

Field ID: NVU Ribs #2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330314	EPA 8321B	2,4-D	0.066		ug/L	P414370	
		Acesulfame K	4.0		ug/L	P414387	
		2,4,5-T	0.0040	U	ug/L	P414370	
		AMPA	0.10	U	ug/L	P414387	
		Acetaminophen	0.011	I	ug/L	P414370	
		Acetamiprid	0.020		ug/L	P414370	
		Endothall	0.25	U	ug/L	P414387	
		Glufosinate	0.13	I	ug/L	P414387	
		Glyphosate	0.10	U	ug/L	P414387	
		Afidopyropen	0.0020	U	ug/L	P414370	
		Bentazon	0.010		ug/L	P414370	
		Sucralose	29		ug/L	P414387	
		Benzovindiflupyr	0.0020	U	ug/L	P414370	
		Carbamazepine	0.040		ug/L	P414370	
		Clothianidin	0.0039	I	ug/L	P414370	
		Dinotefuran	0.0032	I	ug/L	P414370	
		Diuron	0.0052	I	ug/L	P414370	
		Fenuron	0.032	U	ug/L	P414370	
		Fluridone	8.0E-04	U	ug/L	P414370	
		Imazapyr	0.0040	U	ug/L	P414370	
		Hydrocodone	0.0020	U	ug/L	P414370	
		Ibuprofen	0.088		ug/L	P414370	
		Imidacloprid	0.014		ug/L	P414370	
		Linuron	0.0040	U	ug/L	P414370	
		Mandestrobin	0.0020	U	ug/L	P414370	
		MCPP	0.035		ug/L	P414370	
		Naproxen	0.033		ug/L	P414370	
		Primidone	0.22		ug/L	P414370	
		Pyraclostrobin	0.0020	U	ug/L	P414370	
		Silvex	0.0040	U	ug/L	P414370	
		Thiamethoxam	0.0020	U	ug/L	P414370	
		Tolfenpyrad	0.0020	U	ug/L	P414370	
		Triclopyr	0.0040	U	ug/L	P414370	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P414370

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	0.032	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	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: P414387

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: P414370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	80.5		P	40 - 150
2,4,5-T	63.7		P	40 - 150
Acetaminophen	72.0		P	30 - 150
Acetamiprid	93.9		P	40 - 150
Afidopyropen	79.8		P	30 - 150
Bentazon	96.8		P	30 - 150
Benzovindiflupyr	95.1		P	40 - 150
Carbamazepine	96.7		P	40 - 150
Clothianidin	105		P	40 - 150
Dinotefuran	100		P	40 - 150
Diuron	97.0		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	95.1		P	40 - 150
Hydrocodone	90.9		P	40 - 150
Ibuprofen	100		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	94.9		P	40 - 150
Linuron	56.1		P	40 - 150
Mandestrobin	94.1		P	40 - 150
MCPPP	93.4		P	40 - 150
Naproxen	70.3		P	40 - 150
Primidone	96.4		P	40 - 150
Pyraclostrobin	86.4		P	40 - 150
Silvex	62.1		P	40 - 150
Thiamethoxam	95.2		P	40 - 150
Tolfenpyrad	48.1		P	30 - 150
Triclopyr	63.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P414387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	139		P	40 - 150
AMPA	102		P	40 - 150
Endothall	96.3		P	40 - 150
Glufosinate	96.6		P	40 - 150
Glyphosate	94.5		P	40 - 150
Sucralose	101		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P414370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330028	2,4-D	100	90.6	P/P	40 - 150
2330028	2,4,5-T	75.2	71.6	P/P	40 - 150
2330028	Acetaminophen	105	99.1	P/P	30 - 150
2330028	Acetamiprid	95.7	95.8	P/P	40 - 150
2330028	Afidopyropen	52.0	60.1	P/P	30 - 150
2330028	Bentazon	104	96.4	P/P	30 - 150
2330028	Benzovindiflupyr	111	103	P/P	40 - 150
2330028	Carbamazepine	118	105	P/P	40 - 150
2330028	Clothianidin	114	104	P/P	40 - 150
2330028	Dinotefuran	126	116	P/P	40 - 150
2330028	Diuron	105	103	P/P	40 - 150
2330028	Fenuron	105	99.1	P/P	40 - 150
2330028	Fluridone	89.0	90.8	P/P	40 - 150
2330028	Hydrocodone	59.9	68.5	P/P	40 - 150
2330028	Ibuprofen	94.8	100	P/P	40 - 150
2330028	Imazapyr	109	95.6	P/P	40 - 150
2330028	Imidacloprid	121	113	P/P	40 - 150
2330028	Linuron	94.5	91.6	P/P	40 - 150
2330028	Mandestrobin	98.0	95.2	P/P	40 - 150
2330028	MCCP	125	109	P/P	40 - 150
2330028	Naproxen	78.7	77.9	P/P	40 - 150
2330028	Primidone	104	101	P/P	40 - 150
2330028	Pyraclostrobin	98.5	95.1	P/P	40 - 150
2330028	Silvex	66.5	66.7	P/P	40 - 150
2330028	Thiamethoxam	121	114	P/P	40 - 150
2330028	Tolfenpyrad	59.1	53.8	P/P	30 - 150
2330028	Triclopyr	75.7	74.6	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2329967	Acesulfame K	123	122	P/P	40 - 150
2329967	AMPA	98.5	93.8	P/P	40 - 150
2329967	Endothall	95.2	94.1	P/P	40 - 150
2329967	Glufosinate	91.9	94.2	P/P	40 - 150
2329967	Glyphosate	92.0	86.4	P/P	40 - 150
2329967	Sucralose	95.9	98.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P414370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330028	2,4-D	10.3	Spike	P	0 - 30
2330028	2,4,5-T	4.90	Spike	P	0 - 30
2330028	Acetaminophen	5.50	Spike	P	0 - 30
2330028	Acetamiprid	0.170	Spike	P	0 - 30
2330028	Afidopyropen	14.4	Spike	P	0 - 30
2330028	Bentazon	7.49	Spike	P	0 - 30
2330028	Benzovindiflupyr	7.32	Spike	P	0 - 30
2330028	Carbamazepine	11.7	Spike	P	0 - 30
2330028	Clothianidin	9.34	Spike	P	0 - 30
2330028	Dinotefuran	7.81	Spike	P	0 - 30
2330028	Diuron	1.78	Spike	P	0 - 30
2330028	Fenuron	5.71	Spike	P	0 - 30
2330028	Fluridone	2.01	Spike	P	0 - 30
2330028	Hydrocodone	13.4	Spike	P	0 - 30
2330028	Ibuprofen	5.75	Spike	P	0 - 30
2330028	Imazapyr	12.1	Spike	P	0 - 30
2330028	Imidacloprid	7.07	Spike	P	0 - 30
2330028	Linuron	3.15	Spike	P	0 - 30
2330028	Mandestrobin	2.86	Spike	P	0 - 30
2330028	MCP	13.4	Spike	P	0 - 30
2330028	Naproxen	0.948	Spike	P	0 - 30
2330028	Primidone	2.85	Spike	P	0 - 30
2330028	Pyraclostrobin	3.49	Spike	P	0 - 30
2330028	Silvex	0.309	Spike	P	0 - 30
2330028	Thiamethoxam	5.66	Spike	P	0 - 30
2330028	Tolfenpyrad	9.42	Spike	P	0 - 30
2330028	Triclopyr	1.38	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P414387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2329967	Acesulfame K	0.414	Spike	P	0 - 30
2329967	AMPA	4.89	Spike	P	0 - 30
2329967	Endothall	1.12	Spike	P	0 - 30
2329967	Glufosinate	2.43	Spike	P	0 - 30
2329967	Glyphosate	6.36	Spike	P	0 - 30
2329967	Sucralose	1.57	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2330314

Field Sample ID: NVU Ribs #2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	41.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.7	P	30 - 160
EPA 8321B	Diuron-d6	70.6	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.0	P	30 - 160
EPA 8321B	Primidone-d5	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	138	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A112498
Included Lab Sample IDs: 2330314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.3	88.0	P/P	60 - 160
Endothall	102	99.6	P/P	60 - 160
Glufosinate	102	101	P/P	60 - 160
Glyphosate	100	99.5	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112499
Included Lab Sample IDs: 2330314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	129	P/P	60 - 160
Sucralose	96.1	92.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112549
Included Lab Sample IDs: 2330314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.8	103	P/P	50 - 150
2,4,5-T	98.6	97.1	P/P	50 - 150
Acetaminophen	103	101	P/P	60 - 160
Acetamiprid	101	103	P/P	50 - 150
Afidopyropen	104	102	P/P	50 - 150
Bentazon	102	105	P/P	50 - 160
Benzovindiflupyr	107	106	P/P	50 - 150
Carbamazepine	101	103	P/P	60 - 150
Clothianidin	97.2	105	P/P	60 - 150
Dinotefuran	99.8	99.2	P/P	50 - 150
Diuron	105	105	P/P	60 - 160
Fenuron	100	99.8	P/P	60 - 150
Fluridone	110	107	P/P	60 - 160
Hydrocodone	98.3	98.5	P/P	60 - 150
Ibuprofen	115	122	P/P	50 - 160
Imazapyr	98.2	94.3	P/P	50 - 150
Imidacloprid	95.2	97.6	P/P	60 - 150
Linuron	97.3	104	P/P	60 - 150
Mandestrobin	105	105	P/P	50 - 150
MCPP	99.7	97.3	P/P	50 - 150
Naproxen	83.3	104	P/P	50 - 160
Primidone	105	101	P/P	60 - 150
Pyraclostrobin	105	104	P/P	60 - 150
Silvex	94.8	95.6	P/P	50 - 150
Thiamethoxam	99.0	100	P/P	50 - 150
Tolfenpyrad	100	99.6	P/P	60 - 150
Triclopyr	98.6	101	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	80.5	100	90.6		10.3
	2,4,5-T	63.7	75.2	71.6		4.90
	Acesulfame K	139	123	122		0.414
	Acetaminophen	72.0	105	99.1		5.50
	Acetamiprid	93.9	95.7	95.8		0.170
	Afidopyropen	79.8	52.0	60.1		14.4
	AMPA	102	98.5	93.8		4.89
	Bentazon	96.8	104	96.4		7.49
	Benzovindiflupyr	95.1	111	103		7.32
	Carbamazepine	96.7	118	105		11.7
	Clothianidin	105	114	104		9.34
	Dinotefuran	100	126	116		7.81
	Diuron	97.0	105	103		1.78
	Endothall	96.3	95.2	94.1		1.12
	Fenuron	105	105	99.1		5.71
	Fluridone	95.1	89.0	90.8		2.01
	Glufosinate	96.6	91.9	94.2		2.43
	Glyphosate	94.5	86.4	92.0		6.36
	Hydrocodone	90.9	59.9	68.5		13.4
	Ibuprofen	100	94.8	100		5.75
	Imazapyr	102	109	95.6		12.1
	Imidacloprid	94.9	121	113		7.07
	Linuron	56.1	94.5	91.6		3.15
	Mandestrobin	94.1	98.0	95.2		2.86
	MCPP	93.4	125	109		13.4
	Naproxen	70.3	78.7	77.9		0.948
	Primidone	96.4	104	101		2.85
	Pyraclostrobin	86.4	98.5	95.1		3.49
	Silvex	62.1	66.5	66.7		0.309
	Sucralose	101	98.1	95.9		1.57
	Thiamethoxam	95.2	121	114		5.66
	Tolfenpyrad	48.1	59.1	53.8		9.42
	Triclopyr	63.9	75.7	74.6		1.38

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2330314

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/27/2022	05/27/2022 12:30	Umesh Chiluwal	05/27/2022 13:44	Umesh Chiluwal	2330314
	05/27/2022	05/27/2022 12:30	Umesh Chiluwal	05/28/2022 03:12	Umesh Chiluwal	2330314
	05/27/2022	05/27/2022 12:30	Umesh Chiluwal	05/28/2022 17:02	Umesh Chiluwal	2330314
	05/27/2022	05/31/2022 09:30	June Rhew	06/01/2022 04:32	Juyoung Kim	2330314