

Chemical Analysis Report

SE-DIST-2023-04-25-02

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

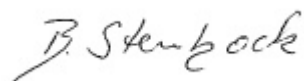
Event Description: **Highlands Run**
Request ID: **RQ-2023-04-10-29**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

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

Date Certified: 08-MAY-2023 12:44



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: KISSIMMEE TRIBUTARY AT US 98 EAST OF BUCKHORN

Collection Date/Time: 04/24/2023 10:45

Field ID: G4SE0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2402673	EPA 8321B	2,4-D	0.0020	U	ug/L	P429013	
		Acesulfame K	0.10	U	ug/L	P428982	
		2,4,5-T	0.0040	U	ug/L	P429013	
		AMPA	0.10	U	ug/L	P428982	
		Acetaminophen	0.0080	U	ug/L	P429013	
		Acetamiprid	0.0020	U	ug/L	P429013	
		Endothall	0.25	U	ug/L	P428982	
		Glufosinate	0.10	U	ug/L	P428982	
		Glyphosate	0.10	U	ug/L	P428982	
		Afidopyropen	0.0020	U	ug/L	P429013	
		Bentazon	8.0E-04	U	ug/L	P429013	
		Sucralose	0.010	U	ug/L	P428982	
		Benzovindiflupyr	0.0020	U	ug/L	P429013	
		Carbamazepine	8.0E-04	U	ug/L	P429013	
		Clothianidin	0.028		ug/L	P429013	
		Dinotefuran	0.0020	U	ug/L	P429013	
		Diuron	0.0033	I	ug/L	P429013	
		Fenuron	0.032	U	ug/L	P429013	
		Fluridone	8.0E-04	U	ug/L	P429013	
		Imazapyr	0.0040	U	ug/L	P429013	
		Hydrocodone	0.0020	U	ug/L	P429013	
		Ibuprofen	0.080	U	ug/L	P429013	
		Imidacloprid	0.083		ug/L	P429013	
		Linuron	0.0040	U	ug/L	P429013	
		Mandestrobin	0.0020	U	ug/L	P429013	
		MCPP	0.0020	U	ug/L	P429013	
		Naproxen	0.0080	U	ug/L	P429013	
		Primidone	0.0040	U	ug/L	P429013	
		Pyraclostrobin	0.0020	U	ug/L	P429013	
		Silvex	0.0040	U	ug/L	P429013	
		Thiamethoxam	0.035		ug/L	P429013	
		Tolfenpyrad	0.0020	U	ug/L	P429013	
		Triclopyr	0.0040	U	ug/L	P429013	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P428982

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: P429013

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	0.080	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
Silvex	0.0040	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: P428982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
AMPA	96.2		P	40 - 150
Endothall	80.7		P	40 - 150
Glufosinate	77.6		P	40 - 150
Glyphosate	98.2		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	106		P	40 - 150
2,4,5-T	100		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Acetamiprid	81.7		P	40 - 150
Afidopyropen	66.2		P	30 - 150
Bentazon	95.9		P	30 - 150
Benzovindiflupyr	91.6		P	40 - 150
Carbamazepine	98.7		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	99.3		P	40 - 150
Diuron	88.5		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	89.2		P	40 - 150
Hydrocodone	90.7		P	40 - 150
Ibuprofen	93.1		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	86.9		P	40 - 150
Linuron	87.0		P	40 - 150
Mandestrobin	88.0		P	40 - 150
MCPP	109		P	40 - 150
Naproxen	82.6		P	40 - 150
Primidone	92.2		P	40 - 150
Pyraclostrobin	86.0		P	40 - 150
Silvex	96.2		P	40 - 150
Thiamethoxam	97.2		P	40 - 150
Tolfenpyrad	59.4		P	30 - 150
Triclopyr	89.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P428982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402494	Acesulfame K	144	144	P/P	40 - 150
2402494	AMPA	90.5	88.5	P/P	40 - 150
2402494	Endothall	80.5	81.7	P/P	40 - 150
2402494	Glufosinate	111	88.7	P/P	40 - 150
2402494	Glyphosate	121	149	P/P	40 - 150
2402494	Sucralose	119	108	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P429013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402644	2,4,5-T	115	123	P/P	40 - 150
2402644	Acetaminophen	101	102	P/P	30 - 150
2402644	Acetamiprid	78.3	80.3	P/P	40 - 150
2402644	Afidopyropen	103	94.8	P/P	30 - 150
2402644	Benzovindiflupyr	95.0	87.1	P/P	40 - 150
2402644	Carbamazepine	91.8	82.8	P/P	40 - 150
2402644	Clothianidin	107	101	P/P	40 - 150
2402644	Dinotefuran	69.9	67.7	P/P	40 - 150
2402644	Diuron	75.7	77.1	P/P	40 - 150
2402644	Fenuron	63.6	63.6	P/P	40 - 150
2402644	Hydrocodone	61.2	60.3	P/P	40 - 150
2402644	Ibuprofen	84.7	92.0	P/P	40 - 150
2402644	Imazapyr	100	98.0	P/P	40 - 150
2402644	Imidacloprid	132	124	P/P	40 - 150
2402644	Linuron	81.7	73.9	P/P	40 - 150
2402644	Mandestrobin	95.7	87.3	P/P	40 - 150
2402644	MCP	131	131	P/P	40 - 150
2402644	Naproxen	91.2	78.0	P/P	40 - 150
2402644	Primidone	90.8	93.7	P/P	40 - 150
2402644	Pyraclostrobin	94.7	85.7	P/P	40 - 150
2402644	Silvex	110	102	P/P	40 - 150
2402644	Thiamethoxam	89.0	83.4	P/P	40 - 150
2402644	Tolfenpyrad	60.8	58.8	P/P	30 - 150
2402644	Triclopyr	127	129	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P428982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402494	Acesulfame K	0.560	Spike	P	0 - 30
2402494	AMPA	1.58	Spike	P	0 - 30
2402494	Endothall	1.50	Spike	P	0 - 30
2402494	Glufosinate	22.3	Spike	P	0 - 30
2402494	Glyphosate	13.4	Spike	P	0 - 30
2402494	Sucralose	9.46	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P429013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402644	2,4-D	7.57	Spike	P	0 - 30
2402644	2,4,5-T	6.62	Spike	P	0 - 30
2402644	Acetaminophen	1.28	Spike	P	0 - 30
2402644	Acetamiprid	2.44	Spike	P	0 - 30
2402644	Afidopyropen	8.18	Spike	P	0 - 30
2402644	Bentazon	3.60	Spike	P	0 - 30
2402644	Benzovindiflupyr	8.67	Spike	P	0 - 30
2402644	Carbamazepine	10.3	Spike	P	0 - 30
2402644	Clothianidin	5.43	Spike	P	0 - 30
2402644	Dinotefuran	3.17	Spike	P	0 - 30
2402644	Diuron	1.70	Spike	P	0 - 30
2402644	Fenuron	0.0412	Spike	P	0 - 30
2402644	Fluridone	4.16	Spike	P	0 - 30
2402644	Hydrocodone	1.33	Spike	P	0 - 30
2402644	Ibuprofen	8.26	Spike	P	0 - 30
2402644	Imazapyr	1.71	Spike	P	0 - 30
2402644	Imidacloprid	5.21	Spike	P	0 - 30
2402644	Linuron	10.0	Spike	P	0 - 30
2402644	Mandestrobin	9.10	Spike	P	0 - 30
2402644	MCPP	0.202	Spike	P	0 - 30
2402644	Naproxen	15.6	Spike	P	0 - 30
2402644	Primidone	2.93	Spike	P	0 - 30
2402644	Pyraclostrobin	10.0	Spike	P	0 - 30
2402644	Silvex	7.26	Spike	P	0 - 30
2402644	Thiamethoxam	6.40	Spike	P	0 - 30
2402644	Tolfenpyrad	3.37	Spike	P	0 - 30
2402644	Triclopyr	2.00	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2402673
Field Sample ID: G4SE0155

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.5	P	30 - 160
EPA 8321B	Diuron-d6	69.0	P	30 - 160
EPA 8321B	Endothall-d6	92.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	72.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.2	P	30 - 160
EPA 8321B	Primidone-d5	95.0	P	30 - 160
EPA 8321B	Sucralose-d6	85.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A118855
Included Lab Sample IDs: 2402673

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.1	92.8	P/P	50 - 150
2,4,5-T	101	100	P/P	50 - 150
Acetaminophen	103	106	P/P	60 - 160
Acetamiprid	106	103	P/P	50 - 150
Afidopyropen	111	69.1	P/P	50 - 150
Bentazon	128	130	P/P	50 - 160
Benzovindiflupyr	108	105	P/P	50 - 150
Carbamazepine	111	107	P/P	60 - 150
Clothianidin	105	103	P/P	60 - 150
Dinotefuran	112	113	P/P	50 - 150
Diuron	122	106	P/P	60 - 160
Fenuron	106	109	P/P	60 - 150
Fluridone	114	116	P/P	60 - 160
Hydrocodone	107	96.9	P/P	60 - 150
Ibuprofen	130	88.7	P/P	50 - 160
Imazapyr	112	102	P/P	50 - 150
Imidacloprid	99.7	97.0	P/P	60 - 150
Linuron	89.2	84.1	P/P	60 - 150
Mandestrobin	99.2	101	P/P	50 - 150
MCPP	105	98.9	P/P	50 - 150
Naproxen	96.0	139	P/P	50 - 160
Primidone	103	102	P/P	60 - 150
Pyraclostrobin	105	113	P/P	60 - 150
Silvex	81.5	104	P/P	50 - 150
Thiamethoxam	112	112	P/P	50 - 150
Tolfenpyrad	98.7	104	P/P	60 - 150
Triclopyr	90.0	95.2	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A118862
Included Lab Sample IDs: 2402673

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	146	153	P/P	60 - 160
Sucralose	130	101	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A118863
Included Lab Sample IDs: 2402673

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.9	95.5	P/P	60 - 160
Endothall	82.7	84.9	P/P	60 - 160
Glufosinate	78.7	79.0	P/P	60 - 160
Glyphosate	99.1	101	P/P	60 - 160

* 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	106				7.57
	2,4,5-T	100	115	123		6.62
	Acesulfame K	122	144	144		0.560
	Acetaminophen	94.9	101	102		1.28
	Acetamiprid	81.7	78.3	80.3		2.44
	Afidopyropen	66.2	103	94.8		8.18
	AMPA	96.2	90.5	88.5		1.58
	Bentazon	95.9				3.60
	Benzovindiflupyr	91.6	95.0	87.1		8.67
	Carbamazepine	98.7	91.8	82.8		10.3
	Clothianidin	95.4	107	101		5.43
	Dinotefuran	99.3	69.9	67.7		3.17
	Diuron	88.5	75.7	77.1		1.70
	Endothall	80.7	80.5	81.7		1.50
	Fenuron	93.5	63.6	63.6		0.0412
	Fluridone	89.2				4.16
	Glufosinate	77.6	111	88.7		22.3
	Glyphosate	98.2	121	149		13.4
	Hydrocodone	90.7	61.2	60.3		1.33
	Ibuprofen	93.1	84.7	92.0		8.26
	Imazapyr	99.5	100	98.0		1.71
	Imidacloprid	86.9	132	124		5.21
	Linuron	87.0	81.7	73.9		10.0
	Mandestrobin	88.0	95.7	87.3		9.10
	MCPP	109	131	131		0.202
	Naproxen	82.6	91.2	78.0		15.6
	Primidone	92.2	90.8	93.7		2.93
	Pyraclostrobin	86.0	94.7	85.7		10.0
	Silvex	96.2	110	102		7.26
	Sucralose	102	119	108		9.46
	Thiamethoxam	97.2	89.0	83.4		6.40
	Tolfenpyrad	59.4	60.8	58.8		3.37
	Triclopyr	89.1	127	129		2.00

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2402673

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/25/2023	04/27/2023 09:00	Hoor Shaik	04/27/2023 21:21	Juyoung Kim	2402673
	04/25/2023	04/28/2023 09:00	Manjita Shrestha	04/28/2023 13:54	Manjita Shrestha	2402673
	04/25/2023	04/28/2023 09:00	Manjita Shrestha	04/29/2023 02:44	Manjita Shrestha	2402673