

Chemical Analysis Report

NW-DIST-2023-04-05-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Freeport Run**
Request ID: **RQ-2023-04-03-45**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 12-APR-2023 16:37



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: Little Black Creek upstream of Black Creek

Collection Date/Time: 04/03/2023 11:00

Field ID: G3NW0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2398314	EPA 8321B	2,4-D	0.0020	U	ug/L	P428189	
		Acesulfame K	0.10	U	ug/L	P428127	
		2,4,5-T	0.0040	U	ug/L	P428189	
		AMPA	0.10	U	ug/L	P428127	
		Acetaminophen	0.0080	U	ug/L	P428189	
		Acetamiprid	0.0020	U	ug/L	P428189	
		Endothall	0.25	U	ug/L	P428127	
		Glufosinate	0.10	U	ug/L	P428127	
		Glyphosate	0.10	U	ug/L	P428127	
		Afidopyropen	0.0020	U	ug/L	P428189	
		Bentazon	8.0E-04	U	ug/L	P428189	
		Sucralose	0.010	U	ug/L	P428127	
		Benzovindiflupyr	0.0020	U	ug/L	P428189	
		Carbamazepine	8.0E-04	U	ug/L	P428189	
		Clothianidin	0.0020	U	ug/L	P428189	
		Dinotefuran	0.0020	U	ug/L	P428189	
		Diuron	0.0020	U	ug/L	P428189	
		Fenuron	0.032	U	ug/L	P428189	
		Fluridone	8.0E-04	U	ug/L	P428189	
		Imazapyr	0.0040	U	ug/L	P428189	
		Hydrocodone	0.0020	U	ug/L	P428189	
		Ibuprofen	0.080	U	ug/L	P428189	
		Imidacloprid	0.0020	U	ug/L	P428189	
		Linuron	0.0040	U	ug/L	P428189	
		Mandestrobin	0.0020	U	ug/L	P428189	
		MCPP	0.0020	U	ug/L	P428189	
		Naproxen	0.0080	U	ug/L	P428189	
		Primidone	0.0040	U	ug/L	P428189	
		Pyraclostrobin	0.0020	U	ug/L	P428189	
		Silvex	0.0040	U	ug/L	P428189	
		Thiamethoxam	0.0020	U	ug/L	P428189	
		Tolfenpyrad	0.0020	U	ug/L	P428189	
		Triclopyr	0.0040	U	ug/L	P428189	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P428127

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: P428189

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: P428127

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.6		P	40 - 150
AMPA	109		P	40 - 150
Endothall	89.8		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	120		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	40 - 150
2,4,5-T	88.6		P	40 - 150
Acetaminophen	99.2		P	30 - 150
Acetamiprid	83.0		P	40 - 150
Afidopyropen	86.6		P	30 - 150
Bentazon	93.8		P	30 - 150
Benzovindiflupyr	79.3		P	40 - 150
Carbamazepine	81.1		P	40 - 150
Clothianidin	86.0		P	40 - 150
Dinotefuran	92.9		P	40 - 150
Diuron	77.7		P	40 - 150
Fenuron	81.5		P	40 - 150
Fluridone	84.1		P	40 - 150
Hydrocodone	96.2		P	40 - 150
Ibuprofen	68.9		P	40 - 150
Imazapyr	91.3		P	40 - 150
Imidacloprid	82.3		P	40 - 150
Linuron	76.6		P	40 - 150
Mandestrobin	81.8		P	40 - 150
MCPP	95.6		P	40 - 150
Naproxen	78.1		P	40 - 150
Primidone	97.0		P	40 - 150
Pyraclostrobin	75.2		P	40 - 150
Silvex	116		P	40 - 150
Thiamethoxam	92.0		P	40 - 150
Tolfenpyrad	46.9		P	30 - 150
Triclopyr	103		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P428127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398314	Acesulfame K	93.7	93.8	P/P	40 - 150
2398314	AMPA	116	114	P/P	40 - 150
2398314	Endothall	98.3	95.1	P/P	40 - 150
2398314	Glufosinate	95.4	99.3	P/P	40 - 150
2398314	Glyphosate	113	111	P/P	40 - 150
2398314	Sucralose	101	119	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398266	2,4-D	119	123	P/P	40 - 150
2398266	2,4,5-T	108	109	P/P	40 - 150
2398266	Acetaminophen	110	106	P/P	30 - 150
2398266	Acetamiprid	92.9	93.3	P/P	40 - 150
2398266	Afidopyropen	104	95.1	P/P	30 - 150
2398266	Bentazon	97.5	103	P/P	30 - 150
2398266	Benzovindiflupyr	86.2	84.1	P/P	40 - 150
2398266	Carbamazepine	90.9	98.7	P/P	40 - 150
2398266	Clothianidin	93.2	97.8	P/P	40 - 150
2398266	Dinotefuran	106	116	P/P	40 - 150
2398266	Diuron	70.9	79.9	P/P	40 - 150
2398266	Fenuron	80.7	82.7	P/P	40 - 150
2398266	Fluridone	84.5	83.9	P/P	40 - 150
2398266	Hydrocodone	106	114	P/P	40 - 150
2398266	Ibuprofen	75.3	73.0	P/P	40 - 150
2398266	Imazapyr	108	112	P/P	40 - 150
2398266	Imidacloprid	99.4	104	P/P	40 - 150
2398266	Linuron	79.8	77.3	P/P	40 - 150
2398266	Mandestrobin	90.9	89.8	P/P	40 - 150
2398266	MCPP	108	103	P/P	40 - 150
2398266	Naproxen	116	110	P/P	40 - 150
2398266	Primidone	103	113	P/P	40 - 150
2398266	Pyraclostrobin	81.6	83.8	P/P	40 - 150
2398266	Silvex	115	124	P/P	40 - 150
2398266	Thiamethoxam	91.2	90.4	P/P	40 - 150
2398266	Tolfenpyrad	48.9	51.2	P/P	30 - 150
2398266	Triclopyr	104	99.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P428127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398314	Acesulfame K	0.0610	Spike	P	0 - 30
2398314	AMPA	1.77	Spike	P	0 - 30
2398314	Endothall	3.27	Spike	P	0 - 30
2398314	Glufosinate	4.00	Spike	P	0 - 30
2398314	Glyphosate	1.86	Spike	P	0 - 30
2398314	Sucralose	16.3	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P428189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398266	2,4-D	3.06	Spike	P	0 - 30
2398266	2,4,5-T	0.103	Spike	P	0 - 30
2398266	Acetaminophen	2.86	Spike	P	0 - 30
2398266	Acetamiprid	0.389	Spike	P	0 - 30
2398266	Afidopyropen	8.59	Spike	P	0 - 30
2398266	Bentazon	4.61	Spike	P	0 - 30
2398266	Benzovindiflupyr	2.44	Spike	P	0 - 30
2398266	Carbamazepine	8.28	Spike	P	0 - 30
2398266	Clothianidin	4.82	Spike	P	0 - 30
2398266	Dinotefuran	8.83	Spike	P	0 - 30
2398266	Diuron	12.0	Spike	P	0 - 30
2398266	Fenuron	2.38	Spike	P	0 - 30
2398266	Fluridone	0.725	Spike	P	0 - 30
2398266	Hydrocodone	6.86	Spike	P	0 - 30
2398266	Ibuprofen	3.12	Spike	P	0 - 30
2398266	Imazapyr	3.99	Spike	P	0 - 30
2398266	Imidacloprid	4.38	Spike	P	0 - 30
2398266	Linuron	3.20	Spike	P	0 - 30
2398266	Mandestrobin	1.26	Spike	P	0 - 30
2398266	MCPP	4.67	Spike	P	0 - 30
2398266	Naproxen	5.99	Spike	P	0 - 30
2398266	Primidone	9.18	Spike	P	0 - 30
2398266	Pyraclostrobin	2.70	Spike	P	0 - 30
2398266	Silvex	7.06	Spike	P	0 - 30
2398266	Thiamethoxam	0.974	Spike	P	0 - 30
2398266	Tolfenpyrad	4.53	Spike	P	0 - 30
2398266	Triclopyr	4.32	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2398314

Field Sample ID: G3NW0200

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.0	P	30 - 160
EPA 8321B	Diuron-d6	61.9	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.3	P	30 - 160
EPA 8321B	Primidone-d5	94.8	P	30 - 160
EPA 8321B	Sucralose-d6	90.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A118472
Included Lab Sample IDs: 2398314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	91.1	91.0	P/P	60 - 160
Sucralose	91.2	123	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A118496
Included Lab Sample IDs: 2398314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	87.0	P/P	50 - 150
2,4,5-T	96.8	101	P/P	50 - 150
Acetaminophen	103	109	P/P	60 - 160
Acetamiprid	95.9	94.9	P/P	50 - 150
Afidopyropen	113	87.6	P/P	50 - 150
Bentazon	122	125	P/P	50 - 160
Benzovindiflupyr	101	103	P/P	50 - 150
Carbamazepine	105	108	P/P	60 - 150
Clothianidin	94.7	100	P/P	60 - 150
Dinotefuran	109	124	P/P	50 - 150
Diuron	126	107	P/P	60 - 160
Fenuron	101	97.9	P/P	60 - 150
Fluridone	97.6	98.9	P/P	60 - 160
Hydrocodone	129	132	P/P	60 - 150
Ibuprofen	126	104	P/P	50 - 160
Imazapyr	101	108	P/P	50 - 150
Imidacloprid	91.1	95.7	P/P	60 - 150
Linuron	88.4	88.5	P/P	60 - 150
Mandestrobin	107	107	P/P	50 - 150
MCPP	95.1	95.4	P/P	50 - 150
Naproxen	138	81.2	P/P	50 - 160
Primidone	118	111	P/P	60 - 150
Pyraclostrobin	102	103	P/P	60 - 150
Silvex	102	86.2	P/P	50 - 150
Thiamethoxam	117	119	P/P	50 - 150
Tolfenpyrad	93.7	95.6	P/P	60 - 150
Triclopyr	94.8	97.1	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A118497
Included Lab Sample IDs: 2398314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	103	P/P	60 - 160
Endothall	105	99.2	P/P	60 - 160
Glufosinate	98.8	108	P/P	60 - 160
Glyphosate	116	110	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	107	119	123		3.06
	2,4,5-T	88.6	108	109		0.103
	Acesulfame K	89.6	93.7	93.8		0.0610
	Acetaminophen	99.2	110	106		2.86
	Acetamiprid	83.0	92.9	93.3		0.389
	Afidopyropen	86.6	104	95.1		8.59
	AMPA	109	116	114		1.77
	Bentazon	93.8	97.5	103		4.61
	Benzovindiflupyr	79.3	86.2	84.1		2.44
	Carbamazepine	81.1	90.9	98.7		8.28
	Clothianidin	86.0	93.2	97.8		4.82
	Dinotefuran	92.9	106	116		8.83
	Diuron	77.7	70.9	79.9		12.0
	Endothall	89.8	98.3	95.1		3.27
	Fenuron	81.5	80.7	82.7		2.38
	Fluridone	84.1	84.5	83.9		0.725
	Glufosinate	105	95.4	99.3		4.00
	Glyphosate	120	113	111		1.86
	Hydrocodone	96.2	106	114		6.86
	Ibuprofen	68.9	75.3	73.0		3.12
	Imazapyr	91.3	108	112		3.99
	Imidacloprid	82.3	99.4	104		4.38
	Linuron	76.6	79.8	77.3		3.20
	Mandestrobin	81.8	90.9	89.8		1.26
	MCPP	95.6	108	103		4.67
	Naproxen	78.1	116	110		5.99
	Primidone	97.0	103	113		9.18
	Pyraclostrobin	75.2	81.6	83.8		2.70
	Silvex	116	115	124		7.06
	Sucralose	102	101	119		16.3
	Thiamethoxam	92.0	91.2	90.4		0.974
	Tolfenpyrad	46.9	48.9	51.2		4.53
	Triclopyr	103	104	99.7		4.32

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2398314

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/05/2023	04/07/2023 15:00	Touraj Touran	04/07/2023 16:29	Manjita Shrestha	2398314
	04/05/2023	04/07/2023 15:00	Touraj Touran	04/09/2023 13:49	Manjita Shrestha	2398314
	04/05/2023	04/10/2023 09:00	Hoor Shaik	04/10/2023 21:38	Juyoung Kim	2398314