

Chemical Analysis Report

NW-DIST-2023-03-22-02

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

Event Description: **Freeport Run**
Request ID: **RQ-2023-03-20-17**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 04-APR-2023 10:44

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: 03/21/2023 11:00

Field ID: G3NW0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2395861	EPA 8321B	2,4-D	0.0020	U	ug/L	P427647	
		Acesulfame K	0.10	U	ug/L	P427546	
		2,4,5-T	0.0040	U	ug/L	P427647	
		AMPA	0.10	U	ug/L	P427546	
		Acetaminophen	0.0080	U	ug/L	P427647	
		Acetamiprid	0.0020	U	ug/L	P427647	
		Endothall	0.25	U	ug/L	P427546	
		Glufosinate	0.10	U	ug/L	P427546	
		Glyphosate	0.10	U	ug/L	P427546	
		Afidopyropen	0.0020	U	ug/L	P427647	
		Bentazon	8.0E-04	U	ug/L	P427647	
		Sucralose	0.010	U	ug/L	P427546	
		Benzovindiflupyr	0.0020	U	ug/L	P427647	
		Carbamazepine	8.0E-04	U	ug/L	P427647	
		Clothianidin	0.0020	U	ug/L	P427647	
		Dinotefuran	0.0020	U	ug/L	P427647	
		Diuron	0.0020	U	ug/L	P427647	
		Fenuron	0.032	U	ug/L	P427647	
		Fluridone	8.0E-04	U	ug/L	P427647	
		Imazapyr	0.0040	U	ug/L	P427647	
		Hydrocodone	0.0020	U	ug/L	P427647	
		Ibuprofen	0.080	U	ug/L	P427647	
		Imidacloprid	0.0020	U	ug/L	P427647	
		Linuron	0.0040	U	ug/L	P427647	
		Mandestrobin	0.0020	U	ug/L	P427647	
		MCPP	0.0020	U	ug/L	P427647	
		Naproxen	0.0080	U	ug/L	P427647	
		Primidone	0.0040	U	ug/L	P427647	
		Pyraclostrobin	0.0020	U	ug/L	P427647	
		Silvex	0.0040	U	ug/L	P427647	
		Thiamethoxam	0.0020	U	ug/L	P427647	
		Tolfenpyrad	0.0020	U	ug/L	P427647	
		Triclopyr	0.0040	U	ug/L	P427647	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P427546

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: P427647

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: P427546

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	88.7		P	40 - 150
AMPA	104		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	92.3		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	86.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P427647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	106		P	40 - 150
2,4,5-T	107		P	40 - 150
Acetaminophen	92.7		P	30 - 150
Acetamiprid	85.4		P	40 - 150
Afidopyropen	71.5		P	30 - 150
Bentazon	91.6		P	30 - 150
Benzovindiflupyr	95.2		P	40 - 150
Carbamazepine	95.2		P	40 - 150
Clothianidin	115		P	40 - 150
Dinotefuran	118		P	40 - 150
Diuron	89.1		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	76.7		P	40 - 150
Hydrocodone	126		P	40 - 150
Ibuprofen	66.0		P	40 - 150
Imazapyr	123		P	40 - 150
Imidacloprid	98.0		P	40 - 150
Linuron	89.6		P	40 - 150
Mandestrobin	87.5		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	95.7		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	79.6		P	40 - 150
Silvex	107		P	40 - 150
Thiamethoxam	117		P	40 - 150
Tolfenpyrad	54.8		P	30 - 150
Triclopyr	98.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P427546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395861	Acesulfame K	95.5	95.8	P/P	40 - 150
2395861	AMPA	114	111	P/P	40 - 150
2395861	Endothall	99.9	107	P/P	40 - 150
2395861	Glufosinate	88.5	87.3	P/P	40 - 150
2395861	Glyphosate	92.7	88.0	P/P	40 - 150
2395861	Sucralose	87.3	87.5	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P427647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2395840	2,4-D	105	98.5	P/P	40 - 150
2395840	2,4,5-T	100	96.1	P/P	40 - 150
2395840	Acetaminophen	87.8	88.4	P/P	30 - 150
2395840	Acetamiprid	90.7	95.7	P/P	40 - 150
2395840	Afidopyropen	74.2	61.6	P/P	30 - 150
2395840	Bentazon	93.6	99.4	P/P	30 - 150
2395840	Benzovindiflupyr	88.7	83.8	P/P	40 - 150
2395840	Carbamazepine	95.1	97.0	P/P	40 - 150
2395840	Clothianidin	118	102	P/P	40 - 150
2395840	Dinotefuran	126	135	P/P	40 - 150
2395840	Diuron	90.9	76.6	P/P	40 - 150
2395840	Fenuron	101	89.4	P/P	40 - 150
2395840	Fluridone	83.0	78.8	P/P	40 - 150
2395840	Hydrocodone	137	131	P/P	40 - 150
2395840	Ibuprofen	72.8	74.6	P/P	40 - 150
2395840	Imazapyr	142	129	P/P	40 - 150
2395840	Imidacloprid	107	92.5	P/P	40 - 150
2395840	Linuron	79.9	90.8	P/P	40 - 150
2395840	Mandestrobin	86.3	81.7	P/P	40 - 150
2395840	MCP	101	101	P/P	40 - 150
2395840	Naproxen	82.9	107	P/P	40 - 150
2395840	Primidone	101	106	P/P	40 - 150
2395840	Pyraclostrobin	70.2	68.7	P/P	40 - 150
2395840	Silvex	99.6	104	P/P	40 - 150
2395840	Thiamethoxam	128	110	P/P	40 - 150
2395840	Tolfenpyrad	44.9	46.2	P/P	30 - 150
2395840	Triclopyr	96.8	92.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P427546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395861	Acesulfame K	0.404	Spike	P	0 - 30
2395861	AMPA	2.09	Spike	P	0 - 30
2395861	Endothall	6.67	Spike	P	0 - 30
2395861	Glufosinate	1.38	Spike	P	0 - 30
2395861	Glyphosate	5.22	Spike	P	0 - 30
2395861	Sucralose	0.184	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P427647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2395840	2,4-D	6.46	Spike	P	0 - 30
2395840	2,4,5-T	4.13	Spike	P	0 - 30
2395840	Acetaminophen	0.713	Spike	P	0 - 30
2395840	Acetamiprid	5.39	Spike	P	0 - 30
2395840	Afidopyropen	18.6	Spike	P	0 - 30
2395840	Bentazon	6.03	Spike	P	0 - 30
2395840	Benzovindiflupyr	5.76	Spike	P	0 - 30
2395840	Carbamazepine	1.94	Spike	P	0 - 30
2395840	Clothianidin	14.6	Spike	P	0 - 30
2395840	Dinotefuran	6.91	Spike	P	0 - 30
2395840	Diuron	17.1	Spike	P	0 - 30
2395840	Fenuron	12.6	Spike	P	0 - 30
2395840	Fluridone	5.13	Spike	P	0 - 30
2395840	Hydrocodone	4.58	Spike	P	0 - 30
2395840	Ibuprofen	2.47	Spike	P	0 - 30
2395840	Imazapyr	9.58	Spike	P	0 - 30
2395840	Imidacloprid	14.2	Spike	P	0 - 30
2395840	Linuron	12.8	Spike	P	0 - 30
2395840	Mandestrobin	5.53	Spike	P	0 - 30
2395840	MCPP	0.560	Spike	P	0 - 30
2395840	Naproxen	25.4	Spike	P	0 - 30
2395840	Primidone	4.16	Spike	P	0 - 30
2395840	Pyraclostrobin	2.26	Spike	P	0 - 30
2395840	Silvex	4.74	Spike	P	0 - 30
2395840	Thiamethoxam	14.9	Spike	P	0 - 30
2395840	Tolfenpyrad	2.88	Spike	P	0 - 30
2395840	Triclopyr	4.07	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2395861

Field Sample ID: G3NW0200

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.1	P	30 - 160
EPA 8321B	Diuron-d6	86.1	P	30 - 160
EPA 8321B	Endothall-d6	88.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.8	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	83.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A118252
 Included Lab Sample IDs: 2395861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	101	P/P	60 - 160
Endothall	110	116	P/P	60 - 160
Glufosinate	111	102	P/P	60 - 160
Glyphosate	113	117	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A118253
 Included Lab Sample IDs: 2395861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	94.7	91.3	P/P	60 - 160
Sucralose	104	106	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A118309
 Included Lab Sample IDs: 2395861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.6	95.2	P/P	50 - 150
2,4,5-T	97.6	93.7	P/P	50 - 150
Acetaminophen	104	105	P/P	60 - 160
Acetamiprid	117	119	P/P	50 - 150
Afidopyropen	93.8	124	P/P	50 - 150
Bentazon	117	128	P/P	50 - 160
Benzovindiflupyr	103	110	P/P	50 - 150
Carbamazepine	114	122	P/P	60 - 150
Clothianidin	131	131	P/P	60 - 150
Dinotefuran	134	149	P/P	50 - 150
Diuron	123	116	P/P	60 - 160
Fenuron	123	123	P/P	60 - 150
Fluridone	106	101	P/P	60 - 160
Hydrocodone	145	145	P/P	60 - 150
Ibuprofen	105	86.8	P/P	50 - 160
Imazapyr	135	134	P/P	50 - 150
Imidacloprid	104	107	P/P	60 - 150
Linuron	107	112	P/P	60 - 150
Mandestrobin	103	112	P/P	50 - 150
MCPP	95.8	87.7	P/P	50 - 150
Naproxen	101	131	P/P	50 - 160
Primidone	112	113	P/P	60 - 150
Pyraclostrobin	102	101	P/P	60 - 150
Silvex	93.1	104	P/P	50 - 150
Thiamethoxam	138	134	P/P	50 - 150
Tolfenpyrad	97.5	98.4	P/P	60 - 150
Triclopyr	107	105	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	106	105	98.5		6.46
	2,4,5-T	107	100	96.1		4.13
	Acesulfame K	88.7	95.5	95.8		0.404
	Acetaminophen	92.7	87.8	88.4		0.713
	Acetamiprid	85.4	90.7	95.7		5.39
	Afidopyropen	71.5	74.2	61.6		18.6
	AMPA	104	114	111		2.09
	Bentazon	91.6	93.6	99.4		6.03
	Benzovindiflupyr	95.2	88.7	83.8		5.76
	Carbamazepine	95.2	95.1	97.0		1.94
	Clothianidin	115	118	102		14.6
	Dinotefuran	118	126	135		6.91
	Diuron	89.1	90.9	76.6		17.1
	Endothall	103	99.9	107		6.67
	Fenuron	109	101	89.4		12.6
	Fluridone	76.7	83.0	78.8		5.13
	Glufosinate	92.3	88.5	87.3		1.38
	Glyphosate	101	92.7	88.0		5.22
	Hydrocodone	126	137	131		4.58
	Ibuprofen	66.0	72.8	74.6		2.47
	Imazapyr	123	142	129		9.58
	Imidacloprid	98.0	107	92.5		14.2
	Linuron	89.6	79.9	90.8		12.8
	Mandestrobin	87.5	86.3	81.7		5.53
	MCPP	101	101	101		0.560
	Naproxen	95.7	82.9	107		25.4
	Primidone	103	101	106		4.16
	Pyraclostrobin	79.6	70.2	68.7		2.26
	Silvex	107	99.6	104		4.74
	Sucralose	86.8	87.3	87.5		0.184
	Thiamethoxam	117	128	110		14.9
	Tolfenpyrad	54.8	44.9	46.2		2.88
	Triclopyr	98.0	96.8	92.9		4.07

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2395861

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/22/2023	03/24/2023 13:00	Manjita Shrestha	03/24/2023 20:43	Manjita Shrestha	2395861
	03/22/2023	03/24/2023 13:00	Manjita Shrestha	03/25/2023 05:04	Manjita Shrestha	2395861
	03/22/2023	03/28/2023 09:00	Hoor Shaik	03/30/2023 23:27	Juyoung Kim	2395861