

Chemical Analysis Report

CEN-DIST-2021-10-08-01

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

Event Description: **Rose Bay/Turnbull/Strickland**
Request ID: **RQ-2021-08-02-19**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 15-OCT-2021 09:27

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

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: Spruce Creek @ 175m US of RR bridge

Collection Date/Time: 10/07/2021 12:35

Field ID: G5CE0135

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2282163	EPA 8321B	Acesulfame K	0.10	U	ug/L	P404790	
		2,4-D	0.0085		ug/L	P404838	MS
		2,4,5-T	0.0040	U	ug/L	P404838	
		AMPA	1.0	UJ	ug/L	P404790	MS
		Acetaminophen	0.0080	U	ug/L	P404838	MS, RPD
		Endothall	0.25	U	ug/L	P404790	
		Acetamiprid	0.0020	U	ug/L	P404838	
		Glufosinate	1.0	U	ug/L	P404790	
		Glyphosate	1.0	UJ	ug/L	P404790	MS
		Afidopyropen	0.0020	U	ug/L	P404838	
		Sucralose	0.50		ug/L	P404790	
		Bentazon	0.052		ug/L	P404838	
		Benzovindiflupyr	0.0020	U	ug/L	P404838	
		Carbamazepine	0.0015	I	ug/L	P404838	
		Clothianidin	0.0022	I	ug/L	P404838	MS
		Dinotefuran	0.0020	U	ug/L	P404838	
		Diuron	0.011		ug/L	P404838	
		Fenuron	0.016	U	ug/L	P404838	
		Fluridone	0.0076		ug/L	P404838	
		Imazapyr	0.062		ug/L	P404838	MS
		Hydrocodone	0.0020	U	ug/L	P404838	
		Ibuprofen	0.020	U	ug/L	P404838	
		Imidacloprid	0.0062	I	ug/L	P404838	MS
		Linuron	0.0040	U	ug/L	P404838	
		Mandestrobin	0.0020	U	ug/L	P404838	
		MCPP	0.0026	I	ug/L	P404838	MS
		Naproxen	0.0080	U	ug/L	P404838	
		Primidone	0.0040	U	ug/L	P404838	
		Pyraclostrobin	0.0020	U	ug/L	P404838	
		Thiamethoxam	0.0020	U	ug/L	P404838	MS
		Tolfenpyrad	0.0020	U	ug/L	P404838	
		Triclopyr	0.0040	U	ug/L	P404838	MS

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MS accuracy for bentazon 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: P404790**

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: P404838**

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P404790

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.7		P	40 - 150
AMPA	93.4		P	40 - 160
Endothall	64.5		P	40 - 150
Glufosinate	111		P	40 - 160
Glyphosate	79.1		P	40 - 160
Sucralose	116		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	99.6		P	40 - 150
Acetaminophen	86.3		P	30 - 150
Acetamiprid	90.5		P	40 - 150
Afidopyropen	101		P	40 - 150
Bentazon	106		P	30 - 150
Benzovindiflupyr	84.3		P	40 - 150
Carbamazepine	105		P	40 - 150
Clothianidin	114		P	40 - 150
Dinotefuran	84.5		P	40 - 150
Diuron	98.9		P	40 - 150
Fenuron	95.6		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	94.9		P	40 - 150
Ibuprofen	90.4		P	40 - 150
Imazapyr	97.7		P	40 - 150
Imidacloprid	97.5		P	40 - 150
Linuron	88.1		P	40 - 150
Mandestrobin	99.1		P	40 - 150
MCPP	115		P	40 - 150
Naproxen	98.5		P	40 - 150
Primidone	93.3		P	40 - 150
Pyraclostrobin	91.9		P	40 - 150
Thiamethoxam	96.0		P	40 - 150
Tolfenpyrad	57.7		P	30 - 150
Triclopyr	102		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P404790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282163	Acesulfame K	123	128	P/P	40 - 150
2282163	AMPA	11.3	9.53	F/F	40 - 160
2282163	Endothall	79.2	79.3	P/P	40 - 150
2282163	Glufosinate	47.6	44.2	P/P	40 - 160
2282163	Glyphosate	38.3	33.0	F/F	40 - 160
2282163	Sucralose	113	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2281589	2,4-D	150	149	F/P	40 - 150
2281589	2,4,5-T	148	140	P/P	40 - 150
2281589	Acetaminophen	161	116	F/P	30 - 150
2281589	Acetamiprid	117	107	P/P	40 - 150
2281589	Afidopyropen	127	119	P/P	40 - 150
2281589	Benzovindiflupyr	118	119	P/P	40 - 150
2281589	Carbamazepine	139	131	P/P	40 - 150
2281589	Clothianidin	136	157	P/F	40 - 150
2281589	Dinotefuran	119	117	P/P	40 - 150
2281589	Diuron	105	108	P/P	40 - 150
2281589	Fenuron	105	94.9	P/P	40 - 150
2281589	Fluridone	111	98.1	P/P	40 - 150
2281589	Hydrocodone	122	117	P/P	40 - 150
2281589	Ibuprofen	97.4	75.2	P/P	40 - 150
2281589	Imazapyr	204	154	F/F	40 - 150
2281589	Imidacloprid	162	164	F/F	40 - 150
2281589	Linuron	104	97.7	P/P	40 - 150
2281589	Mandestrobin	112	106	P/P	40 - 150
2281589	MCP	168	146	F/P	40 - 150
2281589	Naproxen	117	100	P/P	40 - 150
2281589	Primidone	113	122	P/P	40 - 150
2281589	Pyraclostrobin	107	101	P/P	40 - 150
2281589	Thiamethoxam	172	164	F/F	40 - 150
2281589	Tolfenpyrad	72.3	68.1	P/P	30 - 150
2281589	Triclopyr	160	155	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P404790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282163	Acesulfame K	4.38	Spike	P	0 - 30
2282163	AMPA	16.8	Spike	P	0 - 30
2282163	Endothall	0.0523	Spike	P	0 - 30
2282163	Glufosinate	7.42	Spike	P	0 - 30
2282163	Glyphosate	14.9	Spike	P	0 - 30
2282163	Sucralose	0.632	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P404838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2281589	2,4-D	1.19	Spike	P	0 - 30
2281589	2,4,5-T	5.91	Spike	P	0 - 30
2281589	Acetaminophen	32.4	Spike	F	0 - 30
2281589	Acetamiprid	9.01	Spike	P	0 - 30
2281589	Afidopyropen	7.00	Spike	P	0 - 30
2281589	Bentazon	0.742	Spike	P	0 - 30
2281589	Benzovindiflupyr	0.660	Spike	P	0 - 30
2281589	Carbamazepine	5.19	Spike	P	0 - 30
2281589	Clothianidin	13.8	Spike	P	0 - 30
2281589	Dinotefuran	1.70	Spike	P	0 - 30
2281589	Diuron	2.75	Spike	P	0 - 30
2281589	Fenuron	9.98	Spike	P	0 - 30
2281589	Fluridone	12.4	Spike	P	0 - 30
2281589	Hydrocodone	4.41	Spike	P	0 - 30
2281589	Ibuprofen	25.7	Spike	P	0 - 30
2281589	Imazapyr	13.5	Spike	P	0 - 30
2281589	Imidacloprid	1.31	Spike	P	0 - 30
2281589	Linuron	5.91	Spike	P	0 - 30
2281589	Mandestrobin	5.58	Spike	P	0 - 30
2281589	MCPP	12.8	Spike	P	0 - 30
2281589	Naproxen	15.0	Spike	P	0 - 30
2281589	Primidone	7.86	Spike	P	0 - 30
2281589	Pyraclostrobin	5.84	Spike	P	0 - 30
2281589	Thiamethoxam	4.48	Spike	P	0 - 30
2281589	Tolfenpyrad	5.92	Spike	P	0 - 30
2281589	Triclopyr	2.66	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2282163

Field Sample ID: G5CE0135

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	117	P	30 - 160
EPA 8321B	Diuron-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	59.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	39.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.1	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A108217
Included Lab Sample IDs: 2282163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.7	83.7	P/P	60 - 160
Glufosinate	97.8	100	P/P	60 - 160
Glyphosate	76.0	79.1	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A108249
Included Lab Sample IDs: 2282163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	102	P/P	60 - 160
Endothall	71.0	63.8	P/P	60 - 160
Sucralose	117	114	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A108334
Included Lab Sample IDs: 2282163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.2	105	P/P	50 - 150
2,4,5-T	107	115	P/P	50 - 150
Acetaminophen	103	108	P/P	60 - 160
Acetamiprid	104	105	P/P	50 - 150
Afidopyropen	129	118	P/P	50 - 150
Bentazon	118	128	P/P	50 - 160
Benzovindiflupyr	131	125	P/P	50 - 150
Carbamazepine	117	116	P/P	60 - 150
Clothianidin	123	110	P/P	60 - 150
Dinotefuran	114	102	P/P	50 - 150
Diuron	134	121	P/P	60 - 160
Fenuron	103	104	P/P	60 - 150
Fluridone	110	122	P/P	60 - 160
Hydrocodone	103	106	P/P	60 - 150
Ibuprofen	141	124	P/P	50 - 160
Imazapyr	92.0	104	P/P	50 - 150
Imidacloprid	105	110	P/P	60 - 150
Linuron	129	111	P/P	60 - 150
Mandestrobin	114	118	P/P	50 - 150
MCPP	108	113	P/P	50 - 150
Naproxen	119	103	P/P	50 - 160
Primidone	92.4	114	P/P	60 - 150
Pyraclostrobin	126	128	P/P	60 - 150
Thiamethoxam	104	105	P/P	50 - 150
Tolfenpyrad	119	114	P/P	60 - 150
Triclopyr	108	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		Precision SMP	MS
			LCS			
EPA 8321B	2,4-D	102	150	149		1.19
	2,4,5-T	99.6	148	140		5.91
	Acesulfame K	95.7	123	128		4.38
	Acetaminophen	86.3	161	116		32.4
	Acetamiprid	90.5	117	107		9.01
	Afidopyropen	101	127	119		7.00
	AMPA	93.4	11.3	9.53		16.8
	Bentazon	106				0.742
	Benzovindiflupyr	84.3	118	119		0.660
	Carbamazepine	105	139	131		5.19
	Clothianidin	114	136	157		13.8
	Dinotefuran	84.5	119	117		1.70
	Diuron	98.9	105	108		2.75
	Endothall	64.5	79.2	79.3		0.0523
	Fenuron	95.6	105	94.9		9.98
	Fluridone	104	111	98.1		12.4
	Glufosinate	111	47.6	44.2		7.42
	Glyphosate	79.1	38.3	33.0		14.9
	Hydrocodone	94.9	122	117		4.41
	Ibuprofen	90.4	97.4	75.2		25.7
	Imazapyr	97.7	204	154		13.5
	Imidacloprid	97.5	162	164		1.31
	Linuron	88.1	104	97.7		5.91
	Mandestrobin	99.1	112	106		5.58
	MCPP	115	168	146		12.8
	Naproxen	98.5	117	100		15.0
	Primidone	93.3	113	122		7.86
	Pyraclostrobin	91.9	107	101		5.84
	Sucralose	116	113	114		0.632
	Thiamethoxam	96.0	172	164		4.48
	Tolfenpyrad	57.7	72.3	68.1		5.92
	Triclopyr	102	160	155		2.66

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2282163

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/08/2021	10/08/2021 12:10	Juyoung Kim	10/08/2021 13:16	Juyoung Kim	2282163
	10/08/2021	10/08/2021 12:10	Juyoung Kim	10/09/2021 03:59	Manjita Shrestha	2282163
	10/08/2021	10/12/2021 09:00	Hoor Shaik	10/13/2021 19:59	Juyoung Kim	2282163