

Chemical Analysis Report

SW-DIST-2019-09-20-02

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

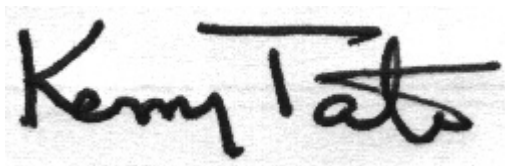
Event Description: **Long Branch (LR6)**
Request ID: **RQ-2019-09-16-03**
Customer: **SW-DIST**
Project ID: **SMP**

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

Date Certified: 02-OCT-2019 10:31

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 first 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: LONG BRANCH TIDAL@WHITNEY RD

Collection Date/Time: 09/19/2019 12:42

Field ID: G1SW0107

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121452	EPA 8321B	2,4-D	0.0033	I	ug/L	P371132	
		Acesulfame K**	0.23	I	ug/L	P371101	
		AMPA**	0.72		ug/L	P371101	
		Sucralose**	0.18		ug/L	P371101	
		Acetaminophen**	0.0080	U	ug/L	P371132	
		Acetamiprid**	0.0020	U	ug/L	P371132	
		Endothall**	0.25	U	ug/L	P371101	
		Glufosinate**	0.10	U	ug/L	P371101	
		Glyphosate**	1.6		ug/L	P371101	
		Afidopyropen**	0.0020	UJ	ug/L	P371132	
		Bentazon	0.039		ug/L	P371132	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371132	
		Carbamazepine**	8.0E-04	U	ug/L	P371132	
		Clothianidin**	0.0020	U	ug/L	P371132	
		Dinotefuran**	0.0020	U	ug/L	P371132	
		Diuron	0.027		ug/L	P371132	
		Fenuron	0.016	U	ug/L	P371132	
		Fluridone**	0.062		ug/L	P371132	
		Imazapyr**	0.16		ug/L	P371132	
		Hydrocodone**	0.0020	U	ug/L	P371132	
		Ibuprofen**	0.020	U	ug/L	P371132	
		Imidacloprid	0.014		ug/L	P371132	MS
		Linuron	0.0040	U	ug/L	P371132	
		Mandestrobin**	0.0020	UJ	ug/L	P371132	
		MCPP	0.0042	I	ug/L	P371132	MS
		Naproxen**	0.0080	U	ug/L	P371132	
		Primidone**	0.0040	U	ug/L	P371132	
		Pyraclostrobin**	0.0020	U	ug/L	P371132	
		Thiamethoxam**	0.0020	U	ug/L	P371132	
		Tolfenpyrad**	0.0020	U	ug/L	P371132	
		Triclopyr**	0.0040	U	ug/L	P371132	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for fluridone and imazapyr could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision 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: P371101

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: P371132

Component	Result	Code	Units
2,4-D	0.0020	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: P371101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	89.5		P	40 - 150
Endothall	83.5		P	40 - 150
Glufosinate	88.1		P	40 - 150
Glyphosate	77.0		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P371132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	131		P	40 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	95.9		P	40 - 160
Afidopyropen	103		P	40 - 160
Bentazon	99.0		P	30 - 160
Benzovindiflupyr	89.4		P	40 - 160
Carbamazepine	119		P	40 - 160
Clothianidin	90.4		P	40 - 160
Dinotefuran	93.3		P	40 - 160
Diuron	91.3		P	40 - 160
Fenuron	101		P	40 - 160
Fluridone	107		P	40 - 160
Hydrocodone	96.4		P	40 - 160
Ibuprofen	84.8		P	30 - 160
Imazapyr	94.3		P	40 - 160
Imidacloprid	116		P	40 - 160
Linuron	76.1		P	40 - 160
Mandestrobin	93.0		P	40 - 160
MCPP	148		P	40 - 160
Naproxen	83.5		P	40 - 160
Primidone	87.3		P	40 - 160
Pyraclostrobin	84.8		P	30 - 160
Thiamethoxam	103		P	40 - 160
Tolfenpyrad	61.7		P	40 - 160
Triclopyr	116		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P371101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121020	Acesulfame K	134	134	P/P	40 - 150
2121020	AMPA	46.3	49.7	P/P	40 - 150
2121020	Endothall	81.1	82.8	P/P	40 - 150
2121020	Glufosinate	81.2	80.4	P/P	40 - 150
2121020	Glyphosate	62.9	68.9	P/P	40 - 140
2121020	Sucralose	111	112	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P371132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121419	2,4-D	132	124	P/P	40 - 160
2121419	Acetaminophen	71.9	75.5	P/P	30 - 160
2121419	Acetamiprid	110	112	P/P	40 - 160
2121419	Afidopyropen	85.6	112	P/P	40 - 160
2121419	Benzovindiflupyr	99.9	98.9	P/P	40 - 160
2121419	Carbamazepine	104	105	P/P	40 - 160
2121419	Clothianidin	98.5	86.7	P/P	40 - 160
2121419	Dinotefuran	111	111	P/P	40 - 160
2121419	Diuron	83.5	82.0	P/P	40 - 160
2121419	Fenuron	83.4	84.5	P/P	40 - 160
2121419	Hydrocodone	93.2	97.4	P/P	40 - 160
2121419	Ibuprofen	89.8	90.7	P/P	30 - 160
2121419	Imidacloprid	182	192	F/F	40 - 160
2121419	Linuron	75.7	76.7	P/P	40 - 160
2121419	Mandestrobin	96.4	98.6	P/P	40 - 160
2121419	MCP	162	168	F/F	40 - 160
2121419	Naproxen	90.4	102	P/P	40 - 160
2121419	Primidone	97.0	99.9	P/P	40 - 160
2121419	Pyraclostrobin	92.1	91.6	P/P	30 - 160
2121419	Thiamethoxam	142	143	P/P	40 - 160
2121419	Tolfenpyrad	71.0	76.6	P/P	40 - 160
2121419	Triclopyr	105	131	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P371101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121020	Acesulfame K	0.412	Spike	P	0 - 30
2121020	AMPA	4.62	Spike	P	0 - 30
2121020	Endothall	2.08	Spike	P	0 - 30
2121020	Glufosinate	1.02	Spike	P	0 - 30
2121020	Glyphosate	7.20	Spike	P	0 - 30
2121020	Sucralose	0.217	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P371132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121419	2,4-D	4.44	Spike	P	0 - 30
2121419	Acetaminophen	4.87	Spike	P	0 - 30
2121419	Acetamiprid	1.41	Spike	P	0 - 30
2121419	Afidopyropen	26.8	Spike	P	0 - 30
2121419	Benzovindiflupyr	1.02	Spike	P	0 - 30
2121419	Carbamazepine	0.853	Spike	P	0 - 30
2121419	Clothianidin	12.3	Spike	P	0 - 30
2121419	Dinotefuran	0.235	Spike	P	0 - 30
2121419	Diuron	1.55	Spike	P	0 - 30
2121419	Fenuron	0.877	Spike	P	0 - 30
2121419	Fluridone	1.16	Spike	P	0 - 30
2121419	Hydrocodone	4.45	Spike	P	0 - 30
2121419	Ibuprofen	0.934	Spike	P	0 - 30
2121419	Imazapyr	7.44	Spike	P	0 - 30
2121419	Imidacloprid	4.37	Spike	P	0 - 30
2121419	Linuron	1.27	Spike	P	0 - 30
2121419	Mandestrobin	2.24	Spike	P	0 - 30
2121419	MCPP	3.72	Spike	P	0 - 30
2121419	Naproxen	12.5	Spike	P	0 - 30
2121419	Primidone	2.63	Spike	P	0 - 30
2121419	Pyraclostrobin	0.502	Spike	P	0 - 30
2121419	Thiamethoxam	0.693	Spike	P	0 - 30
2121419	Tolfenpyrad	7.61	Spike	P	0 - 30
2121419	Triclopyr	22.6	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2121452
Field Sample ID: G1SW0107

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	70.0	P	30 - 160
EPA 8321B	Bentazon-d7	53.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.8	P	30 - 160
EPA 8321B	Diuron-d6	78.3	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.1	P	30 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A94467
Included Lab Sample IDs: 2121452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.1	121	P/P	60 - 160
Endothall	93.2	93.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A94522
Included Lab Sample IDs: 2121452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	69.2	99.4	P/P	60 - 160
Glufosinate	75.0	86.5	P/P	60 - 160
Glyphosate	62.0	102	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A94534
Included Lab Sample IDs: 2121452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	97.9	P/P	50 - 150
Acetaminophen	110	105	P/P	60 - 160
Acetamiprid	107	113	P/P	50 - 150
Afidopyropen	101	93.3	P/P	50 - 150
Bentazon	102	112	P/P	50 - 160
Benzovindiflupyr	109	109	P/P	50 - 150
Carbamazepine	121	122	P/P	60 - 150
Clothianidin	112	94.4	P/P	60 - 150
Dinotefuran	107	96.8	P/P	50 - 150
Diuron	104	105	P/P	60 - 150
Fenuron	110	108	P/P	60 - 150
Fluridone	108	111	P/P	60 - 160
Hydrocodone	108	109	P/P	60 - 150
Ibuprofen	97.4	98.2	P/P	50 - 160
Imazapyr	109	94.6	P/P	50 - 150
Imidacloprid	103	95.4	P/P	60 - 150
Linuron	102	108	P/P	60 - 150
Mandestrobin	117	117	P/P	50 - 150
MCPP	102	99.2	P/P	50 - 150
Naproxen	130	109	P/P	50 - 160
Primidone	101	95.7	P/P	60 - 150
Pyraclostrobin	110	108	P/P	60 - 150
Thiamethoxam	106	102	P/P	50 - 150
Tolfenpyrad	111	112	P/P	60 - 150
Triclopyr	105	92.2	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A94586
Included Lab Sample IDs: 2121452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.8	103	P/P	60 - 160

Quality Assurance Report

Calibration Verification

* 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	131	132	124		4.44
	Acesulfame K	126	134	134		0.412
	Acetaminophen	87.5	71.9	75.5		4.87
	Acetamiprid	95.9	110	112		1.41
	Afidopyropen	103	85.6	112		26.8
	AMPA	89.5	46.3	49.7		4.62
	Bentazon	99.0				
	Benzovindiflupyr	89.4	99.9	98.9		1.02
	Carbamazepine	119	104	105		0.853
	Clothianidin	90.4	98.5	86.7		12.3
	Dinotefuran	93.3	111	111		0.235
	Diuron	91.3	83.5	82.0		1.55
	Endothall	83.5	81.1	82.8		2.08
	Fenuron	101	83.4	84.5		0.877
	Fluridone	107				1.16
	Glufosinate	88.1	81.2	80.4		1.02
	Glyphosate	77.0	62.9	68.9		7.20
	Hydrocodone	96.4	93.2	97.4		4.45
	Ibuprofen	84.8	89.8	90.7		0.934
	Imazapyr	94.3				7.44
	Imidacloprid	116	182	192		4.37
	Linuron	76.1	75.7	76.7		1.27
	Mandestrobin	93.0	96.4	98.6		2.24
	MCPP	148	162	168		3.72
	Naproxen	83.5	90.4	102		12.5
	Primidone	87.3	97.0	99.9		2.63
	Pyraclostrobin	84.8	92.1	91.6		0.502
	Sucralose	109	111	112		0.217
	Thiamethoxam	103	142	143		0.693
	Tolfenpyrad	61.7	71.0	76.6		7.61
	Triclopyr	116	105	131		22.6

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2121452
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2121452

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/23/2019 12:48	Rebecca Ware	2121452
	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/24/2019 20:05	Rebecca Ware	2121452
	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/27/2019 19:49	Rebecca Ware	2121452
	09/20/2019	09/24/2019 13:10	Hoor Shaik	09/25/2019 03:27	Juyoung Kim	2121452