

Chemical Analysis Report

SW-DIST-2019-02-21-01

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

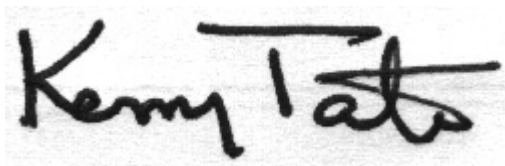
Event Description: **Longbranch, PC Site#22-01**
Request ID: **RQ-2019-02-18-33**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 04-MAR-2019 10:43

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: 02/20/2019 09:39

Field ID: G1SW0107

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064413	EPA 8321B	Acesulfame K**	0.11	I	ug/L	P359225	
		2,4-D	0.0038	I	ug/L	P359229	
		AMPA**	0.59		ug/L	P359225	
		Sucralose**	0.18		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.0080	U	ug/L	P359229	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	3.6		ug/L	P359225	
		Bentazon	0.043		ug/L	P359229	
		Carbamazepine**	8.0E-04	U	ug/L	P359229	
		Diuron	0.0034	I	ug/L	P359229	
		Fenuron	0.016	U	ug/L	P359229	
		Fluridone**	0.026		ug/L	P359229	
		Imazapyr**	0.088		ug/L	P359229	
		Hydrocodone**	0.0020	U	ug/L	P359229	
		Ibuprofen**	0.020	U	ug/L	P359229	
		Imidacloprid	0.018		ug/L	P359229	MS
		Linuron	0.0040	U	ug/L	P359229	
		MCPP	0.0047	I	ug/L	P359229	
		Naproxen**	0.0080	U	ug/L	P359229	
		Primidone**	0.0040	U	ug/L	P359229	
		Pyraclostrobin**	0.0020	U	ug/L	P359229	
		Triclopyr**	0.0040	U	ug/L	P359229	

Ref. Method and Comment:

EPA 8321B: MS accuracy for glyphosate 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: P359225

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: P359229

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P359225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	64.7		P	40 - 150
Endothall	93.1		P	40 - 150
Glufosinate	89.0		P	40 - 150
Glyphosate	91.9		P	40 - 140
Sucralose	98.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.2		P	40 - 150
Acetaminophen	94.8		P	30 - 150
Bentazon	112		P	30 - 150
Carbamazepine	89.6		P	40 - 150
Diuron	83.6		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	115		P	40 - 150
Ibuprofen	78.0		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	82.6		P	40 - 150
MCPP	97.3		P	40 - 150
Naproxen	75.3		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	69.3		P	40 - 150
Triclopyr	56.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P359225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063987	Acesulfame K	90.0	87.7	P/P	40 - 150
2063987	AMPA	53.0	62.5	P/P	40 - 150
2063987	Endothall	128	119	P/P	40 - 150
2063987	Glufosinate	87.4	95.8	P/P	40 - 150
2063987	Sucralose	104	105	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P359229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065167	2,4-D	107	100	P/P	40 - 150
2065167	Acetaminophen	103	103	P/P	30 - 150
2065167	Bentazon	90.7	73.0	P/P	30 - 150
2065167	Carbamazepine	79.7	79.0	P/P	40 - 150
2065167	Diuron	74.6	72.4	P/P	40 - 150
2065167	Fenuron	111	105	P/P	40 - 150
2065167	Fluridone	117	111	P/P	40 - 150
2065167	Hydrocodone	124	123	P/P	40 - 150
2065167	Ibuprofen	83.8	77.5	P/P	40 - 150
2065167	Imazapyr	111	99.2	P/P	40 - 150
2065167	Imidacloprid	194	192	F/F	40 - 150
2065167	Linuron	78.0	71.2	P/P	40 - 150
2065167	MCPP	123	113	P/P	40 - 150
2065167	Naproxen	71.6	67.4	P/P	40 - 150
2065167	Primidone	119	116	P/P	40 - 150
2065167	Pyraclostrobin	86.3	81.4	P/P	40 - 150
2065167	Triclopyr	67.3	59.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P359225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063987	Acesulfame K	2.48	Spike	P	0 - 30
2063987	AMPA	9.77	Spike	P	0 - 30
2063987	Endothall	7.35	Spike	P	0 - 30
2063987	Glufosinate	9.20	Spike	P	0 - 30
2063987	Glyphosate	8.75	Spike	P	0 - 30
2063987	Sucralose	0.796	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P359229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065167	2,4-D	6.48	Spike	P	0 - 30
2065167	Acetaminophen	0.828	Spike	P	0 - 30
2065167	Bentazon	6.36	Spike	P	0 - 30
2065167	Carbamazepine	0.809	Spike	P	0 - 30
2065167	Diuron	3.06	Spike	P	0 - 30
2065167	Fenuron	5.16	Spike	P	0 - 30
2065167	Fluridone	4.45	Spike	P	0 - 30
2065167	Hydrocodone	0.752	Spike	P	0 - 30
2065167	Ibuprofen	7.83	Spike	P	0 - 30
2065167	Imazapyr	4.88	Spike	P	0 - 30
2065167	Imidacloprid	0.779	Spike	P	0 - 30
2065167	Linuron	9.10	Spike	P	0 - 30
2065167	MCP	8.15	Spike	P	0 - 30
2065167	Naproxen	6.05	Spike	P	0 - 30
2065167	Primidone	2.81	Spike	P	0 - 30
2065167	Pyraclostrobin	5.86	Spike	P	0 - 30
2065167	Triclopyr	12.4	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: 2064413
Field Sample ID: G1SW0107

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.0	P	30 - 160
EPA 8321B	Diuron-d6	65.9	P	30 - 160
EPA 8321B	Endothall-d6	140	P	40 - 160
EPA 8321B	Endothall-d6	140	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	76.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	76.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	92.8	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89599
Included Lab Sample IDs: 2064413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.1	104	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89706
Included Lab Sample IDs: 2064413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	87.9	P/P	60 - 160
Endothall	103	112	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89708
Included Lab Sample IDs: 2064413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	70.4	71.5	P/P	60 - 160
Glufosinate	112	111	P/P	60 - 160
Glyphosate	122	110	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89717
Included Lab Sample IDs: 2064413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	122	P/P	50 - 150
Acetaminophen	112	115	P/P	60 - 160
Bentazon	118	116	P/P	50 - 160
Carbamazepine	106	104	P/P	60 - 150
Diuron	111	113	P/P	60 - 150
Fenuron	109	111	P/P	60 - 150
Fluridone	109	111	P/P	60 - 160
Hydrocodone	110	111	P/P	60 - 150
Ibuprofen	106	87.8	P/P	50 - 160
Imazapyr	101	98.8	P/P	50 - 150
Imidacloprid	100	103	P/P	60 - 150
Linuron	110	105	P/P	60 - 150
MCPP	87.3	88.8	P/P	50 - 150
Naproxen	107	96.9	P/P	50 - 160
Primidone	104	104	P/P	60 - 150
Pyraclostrobin	101	102	P/P	60 - 150
Triclopyr	86.8	93.9	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	
					LCS	MS
EPA 8321B	2,4-D	84.2	107	100		6.48
	Acesulfame K	113	90.0	87.7		2.48
	Acetaminophen	94.8	103	103		0.828
	AMPA	64.7	53.0	62.5		9.77
	Bentazon	112	90.7	73.0		6.36
	Carbamazepine	89.6	79.7	79.0		0.809
	Diuron	83.6	74.6	72.4		3.06
	Endothall	93.1	128	119		7.35
	Fenuron	129	111	105		5.16
	Fluridone	114	117	111		4.45
	Glufosinate	89.0	87.4	95.8		9.20
	Glyphosate	91.9				8.75
	Hydrocodone	115	124	123		0.752
	Ibuprofen	78.0	83.8	77.5		7.83
	Imazapyr	102	111	99.2		4.88
	Imidacloprid	104	194	192		0.779
	Linuron	82.6	78.0	71.2		9.10
	MCPP	97.3	123	113		8.15
	Naproxen	75.3	71.6	67.4		6.05
	Primidone	103	119	116		2.81
	Pyraclostrobin	69.3	86.3	81.4		5.86
	Sucralose	98.2	104	105		0.796
	Triclopyr	56.7	67.3	59.4		12.4

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2064413
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2064413

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 15:05	Rebecca Ware	2064413
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 21:11	Rebecca Ware	2064413
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 09:12	Mohammad Ghaffari	2064413
	02/21/2019	02/27/2019 09:30	Hoor Shaik	02/28/2019 01:33	Juyoung Kim	2064413