Chemical Analysis Report

TLH-ROC-2018-05-24-04

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

Event Description: **b/t/m PCR-FILTER_183 (Polk Creek)**
Request ID: **RQ-2018-03-19-40**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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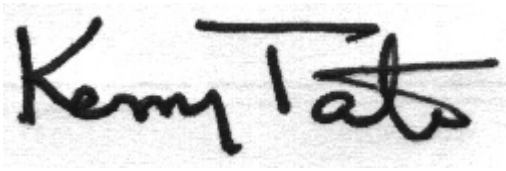
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 18-JUN-2018 13:53



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 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: POLK CREEK @ END OF MERRY ROBIN RD **Collection Date/Time: 05/24/2018 13:05**

Field ID: G1TLHR0055 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1995438	EPA 8321B	2,4-D	0.0020	U	ug/L	P345863	
		Bentazon	8.0E-04	U	ug/L	P345863	
		MCPP	0.0020	U	ug/L	P345863	
		Triclopyr**	0.0040	U	ug/L	P345863	
		Imidacloprid	0.0020	U	ug/L	P345863	MS
		Diuron	0.0020	U	ug/L	P345863	
		Pyraclostrobin**	0.0020	U	ug/L	P345863	
		Primidone**	0.0040	U	ug/L	P345863	
		Linuron	0.0040	U	ug/L	P345863	
		Acetaminophen**	0.0080	U	ug/L	P345863	
		Fenuron	0.016	U	ug/L	P345863	
		Imazapyr**	0.0040	U	ug/L	P345863	
		Carbamazepine**	4.0E-04	U	ug/L	P345863	
		Fluridone**	4.0E-04	U	ug/L	P345863	
		Hydrocodone**	8.0E-04	U	ug/L	P345863	
		Sucralose**	0.10	U	ug/L	P345837	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P345837

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P345863

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P345837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P345863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.8		P	40 - 150
Acetaminophen	99.0		P	30 - 150
Bentazon	90.9		P	30 - 150
Carbamazepine	66.6		P	40 - 150
Diuron	53.8		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	65.5		P	40 - 150
Hydrocodone	86.4		P	40 - 150
Imazapyr	80.1		P	40 - 150
Imidacloprid	107		P	40 - 160
Linuron	57.9		P	40 - 150
MCPP	90.7		P	40 - 150
Primidone	97.1		P	40 - 150
Pyraclostrobin	73.1		P	40 - 150
Triclopyr	86.9		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P345837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994753	Sucralose	121	108	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P345863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995511	2,4-D	126	135	P/P	40 - 150
1995511	Acetaminophen	136	111	P/P	30 - 150
1995511	Bentazon	60.3	64.2	P/P	30 - 150
1995511	Carbamazepine	64.0	56.2	P/P	40 - 150
1995511	Diuron	51.4	43.9	P/P	40 - 150
1995511	Fenuron	94.8	85.6	P/P	40 - 150
1995511	Fluridone	68.4	58.3	P/P	40 - 150
1995511	Hydrocodone	111	90.1	P/P	40 - 150
1995511	Imazapyr	118	98.3	P/P	40 - 150
1995511	Imidacloprid	194	157	F/P	40 - 160
1995511	Linuron	59.6	56.9	P/P	40 - 150
1995511	MCPP	111	125	P/P	40 - 150
1995511	Primidone	130	114	P/P	40 - 150
1995511	Pyraclostrobin	84.3	72.8	P/P	40 - 150
1995511	Triclopyr	107	124	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P345837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994753	Sucralose	9.03	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P345863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995511	2,4-D	6.77	Spike	P	0 - 30
1995511	Acetaminophen	20.4	Spike	P	0 - 30
1995511	Bentazon	5.66	Spike	P	0 - 30
1995511	Carbamazepine	13.0	Spike	P	0 - 30
1995511	Diuron	15.7	Spike	P	0 - 30
1995511	Fenuron	10.2	Spike	P	0 - 30
1995511	Fluridone	15.9	Spike	P	0 - 30
1995511	Hydrocodone	21.1	Spike	P	0 - 30
1995511	Imazapyr	17.9	Spike	P	0 - 30
1995511	Imidacloprid	21.2	Spike	P	0 - 30
1995511	Linuron	4.56	Spike	P	0 - 30
1995511	MCPP	12.0	Spike	P	0 - 30
1995511	Primidone	13.3	Spike	P	0 - 30
1995511	Pyraclostrobin	14.7	Spike	P	0 - 30
1995511	Triclopyr	15.1	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: 1995438
Field Sample ID: G1TLHR0055

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	155	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.3	P	30 - 160
EPA 8321B	Diuron-d6	58.8	P	30 - 160
EPA 8321B	Primidone-d5	86.2	P	30 - 160
EPA 8321B	Sucralose-d6	131	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A84186
Included Lab Sample IDs: 1995438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	99.2	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A84278
Included Lab Sample IDs: 1995438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.5	106	P/P	50 - 150
Bentazon	116	131	P/P	50 - 150
MCPP	94.0	99.9	P/P	50 - 150
Triclopyr	96.8	116	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A84432
Included Lab Sample IDs: 1995438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	138	127	P/P	60 - 150
Carbamazepine	128	128	P/P	60 - 150
Diuron	122	130	P/P	60 - 150
Fenuron	98.6	101	P/P	60 - 150
Fluridone	134	131	P/P	60 - 160
Hydrocodone	110	99.7	P/P	60 - 150
Imazapyr	97.0	98.8	P/P	50 - 150
Imidacloprid	102	104	P/P	60 - 150
Linuron	119	116	P/P	60 - 150
Primidone	110	103	P/P	60 - 150
Pyraclostrobin	105	106	P/P	60 - 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	SMP	MS
EPA 8321B	2,4-D	82.8	126	135			6.77
	Acetaminophen	99.0	136	111			20.4
	Bentazon	90.9	60.3	64.2			5.66
	Carbamazepine	66.6	64.0	56.2			13.0
	Diuron	53.8	51.4	43.9			15.7
	Fenuron	102	94.8	85.6			10.2
	Fluridone	65.5	68.4	58.3			15.9
	Hydrocodone	86.4	111	90.1			21.1
	Imazapyr	80.1	118	98.3			17.9
	Imidacloprid	107	194	157			21.2
	Linuron	57.9	59.6	56.9			4.56
	MCPP	90.7	111	125			12.0
	Primidone	97.1	130	114			13.3
	Pyraclostrobin	73.1	84.3	72.8			14.7
	Sucralose	97.3	121	108			9.03
	Triclopyr	86.9	107	124			15.1

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1995438

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/24/2018	05/25/2018 14:00	Juyoung Kim	05/26/2018 03:00	Juyoung Kim	1995438
	05/24/2018	05/30/2018 10:00	Hoor Shaik	06/01/2018 06:34	Juyoung Kim	1995438
	05/24/2018	05/30/2018 10:00	Hoor Shaik	06/02/2018 21:46	Juyoung Kim	1995438