

Chemical Analysis Report

TLH-ROC-2018-04-04-03

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
Attn: Michael Eckles

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 18-APR-2018 16:45



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: 04/04/2018 14:55

Field ID: G1TLHR0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981245	EPA 8321B	2,4-D	0.0020	U	ug/L	P342718	
		Sucralose**	0.11	U	ug/L	P342722	
		Bentazon	8.0E-04	U	ug/L	P342718	
		MCP	0.0020	U	ug/L	P342718	
		Triclopyr**	0.0040	U	ug/L	P342718	
		Imidacloprid	0.0020	U	ug/L	P342718	MS
		Diuron	0.0020	U	ug/L	P342718	
		Pyraclostrobin**	0.0020	U	ug/L	P342718	
		Primidone**	0.0040	U	ug/L	P342718	
		Linuron	0.0040	U	ug/L	P342718	
		Acetaminophen**	0.0080	U	ug/L	P342718	
		Fenuron	0.016	U	ug/L	P342718	
		Imazapyr**	0.0040	U	ug/L	P342718	
		Carbamazepine**	4.0E-04	U	ug/L	P342718	
		Fluridone**	8.0E-04	U	ug/L	P342718	
		Hydrocodone**	8.0E-04	U	ug/L	P342718	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P342718

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	8.0E-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
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P342722

Component	Result	Code	Units
Sucralose	0.11	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P342718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	79.4		P	40 - 150
Acetaminophen	112		P	30 - 150
Bentazon	75.4		P	30 - 150
Carbamazepine	85.3		P	40 - 150
Diuron	66.7		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	60.5		P	40 - 150
Hydrocodone	125		P	40 - 150
Imazapyr	76.4		P	40 - 150
Imidacloprid	111		P	40 - 160
Linuron	75.8		P	40 - 150
MCP	62.7		P	40 - 150
Primidone	124		P	40 - 150
Pyraclostrobin	77.1		P	40 - 150
Triclopyr	62.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342722

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P342718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980630	2,4-D	109	105	P/P	40 - 150
1980630	Acetaminophen	133	139	P/P	30 - 150
1980630	Bentazon	47.9	43.1	P/P	30 - 150
1980630	Carbamazepine	90.1	94.4	P/P	40 - 150
1980630	Diuron	72.0	75.5	P/P	40 - 150
1980630	Fenuron	98.4	105	P/P	40 - 150
1980630	Fluridone	59.2	62.4	P/P	40 - 150
1980630	Hydrocodone	137	142	P/P	40 - 150
1980630	Imazapyr	77.5	73.9	P/P	40 - 150
1980630	Imidacloprid	207	205	F/F	40 - 160
1980630	Linuron	88.5	89.9	P/P	40 - 150
1980630	MCP	84.8	81.2	P/P	40 - 150
1980630	Primidone	126	121	P/P	40 - 150
1980630	Pyraclostrobin	78.6	84.1	P/P	40 - 150
1980630	Triclopyr	89.7	85.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980974	Sucralose	64.8	66.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P342718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980630	2,4-D	3.48	Spike	P	0 - 30
1980630	Acetaminophen	4.43	Spike	P	0 - 30
1980630	Bentazon	7.99	Spike	P	0 - 30
1980630	Carbamazepine	4.62	Spike	P	0 - 30
1980630	Diuron	4.75	Spike	P	0 - 30
1980630	Fenuron	6.53	Spike	P	0 - 30
1980630	Fluridone	5.10	Spike	P	0 - 30
1980630	Hydrocodone	3.55	Spike	P	0 - 30
1980630	Imazapyr	3.03	Spike	P	0 - 30
1980630	Imidacloprid	0.795	Spike	P	0 - 30
1980630	Linuron	1.55	Spike	P	0 - 30
1980630	MCP	4.32	Spike	P	0 - 30
1980630	Primidone	3.73	Spike	P	0 - 30
1980630	Pyraclostrobin	6.72	Spike	P	0 - 30
1980630	Triclopyr	5.26	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P342722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980974	Sucralose	2.61	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: 1981245
 Field Sample ID: G1TLHR0055

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	143	P	30 - 160
EPA 8321B	Acetaminophen-d4	128	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	97.4	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	52.2	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A83110
 Included Lab Sample IDs: 1981245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	93.3	P/P	50 - 150
Acetaminophen	119	111	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A83110
 Included Lab Sample IDs: 1981245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	93.1	90.5	P/P	50 - 150
Carbamazepine	109	111	P/P	60 - 150
Diuron	112	123	P/P	60 - 150
Fenuron	108	109	P/P	60 - 150
Fluridone	115	119	P/P	60 - 160
Hydrocodone	121	120	P/P	60 - 150
Imazapyr	90.3	84.4	P/P	50 - 150
Imidacloprid	116	112	P/P	60 - 150
Linuron	123	118	P/P	60 - 150
MCP	95.3	101	P/P	50 - 150
Primidone	117	114	P/P	60 - 150
Pyraclostrobin	118	117	P/P	60 - 150
Triclopyr	98.4	102	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A83192
 Included Lab Sample IDs: 1981245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	110	P/P	60 - 130

* 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	LCS	Precision SMP	MS
EPA 8321B	2,4-D	79.4	109 105			3.48
	Acetaminophen	112	133 139			4.43
	Bentazon	75.4	47.9 43.1			7.99
	Carbamazepine	85.3	90.1 94.4			4.62
	Diuron	66.7	72.0 75.5			4.75
	Fenuron	120	98.4 105			6.53
	Fluridone	60.5	59.2 62.4			5.10
	Hydrocodone	125	137 142			3.55
	Imazapyr	76.4	77.5 73.9			3.03
	Imidacloprid	111	207 205			0.795
	Linuron	75.8	88.5 89.9			1.55
	MCP	62.7	84.8 81.2			4.32
	Primidone	124	126 121			3.73
	Pyraclostrobin	77.1	78.6 84.1			6.72
	Sucralose	121	64.8 66.5			2.61
	Triclopyr	62.6	89.7 85.1			5.26

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1981245
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1981245

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/04/2018	04/05/2018 13:00	Hoor Shaik	04/06/2018 18:28	Julie Michelle Frank	1981245
	04/04/2018	04/05/2018 13:00	Hoor Shaik	04/07/2018 10:37	Julie Michelle Frank	1981245
	04/04/2018	04/05/2018 15:30	Julie Michelle Frank	04/11/2018 03:03	Julie Michelle Frank	1981245