

Chemical Analysis Report

TLH-ROC-2017-10-30-02

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

Event Description: **SMP 2017 kit_b/t/m PCR-FILTER / PCR-HF183 / (811
Ocklawaha Creek)**
Request ID: **RQ-2017-10-30-56**
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: Liang Lin, Environmental Administrator

Date Certified: 01-DEC-2017 10:56

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured background.

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: Woods Creek @ Osteen Rd

Collection Date/Time: 10/30/2017 11:05

Field ID: G1TLHR0067-2017-09

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941073	EPA 8321B	Sucralose**	0.010	U	ug/L	P334426	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335855	
		Diuron	8.0E-04	U	ug/L	P334232	
		Fenuron	0.0080	U	ug/L	P334232	
		Imidacloprid	8.0E-04	U	ug/L	P334232	
		Bentazon	8.0E-04	UQ	ug/L	P335855	
		Linuron	0.0040	U	ug/L	P334232	
		Acetaminophen**	0.0080	U	ug/L	P334232	
		MCP	0.0020	UQ	ug/L	P335855	
		Carbamazepine**	4.0E-04	U	ug/L	P334232	
		Triclopyr**	0.0040	UQ	ug/L	P335855	
		Primidone**	0.0040	U	ug/L	P334232	
		Fluridone**	4.0E-04	U	ug/L	P334232	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P334426

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P334232

Component	Result	Code	Units
Acetaminophen	0.0080	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P335855

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	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: P334426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P334232

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	89.6		P	30 - 150
Carbamazepine	114		P	40 - 150
Diuron	107		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	110		P	40 - 150
Imidacloprid	106		P	40 - 160
Linuron	110		P	40 - 150
Primidone	104		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 150
Bentazon	93.5		P	30 - 150
MCP	94.7		P	40 - 150
Triclopyr	94.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P334426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940829	Sucralose	88.8	97.9	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P334232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941073	Acetaminophen	98.3	103	P/P	30 - 150
1941073	Carbamazepine	133	136	P/P	40 - 150
1941073	Diuron	105	109	P/P	40 - 150
1941073	Fenuron	107	102	P/P	40 - 150
1941073	Fluridone	112	114	P/P	40 - 150
1941073	Imidacloprid	147	150	P/P	40 - 160
1941073	Linuron	109	114	P/P	40 - 150
1941073	Primidone	125	124	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940704	2,4-D	84.2	80.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P335855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940704	Bentazon	83.8	80.9	P/P	30 - 150
1940704	MCP	64.0	60.9	P/P	40 - 150
1940704	Triclopyr	60.1	58.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P334426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940829	Sucralose	9.28	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P334232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941073	Acetaminophen	4.98	Spike	P	0 - 30
1941073	Carbamazepine	2.78	Spike	P	0 - 30
1941073	Diuron	3.60	Spike	P	0 - 30
1941073	Fenuron	4.64	Spike	P	0 - 30
1941073	Fluridone	1.61	Spike	P	0 - 30
1941073	Imidacloprid	1.88	Spike	P	0 - 30
1941073	Linuron	4.36	Spike	P	0 - 30
1941073	Primidone	0.498	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P335855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940704	2,4-D	4.91	Spike	P	0 - 30
1940704	Bentazon	3.52	Spike	P	0 - 30
1940704	MCP	4.91	Spike	P	0 - 30
1940704	Triclopyr	3.14	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: 1941073
Field Sample ID: G1TLHR0067-2017-09

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	84.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	128	P	30 - 160
EPA 8321B	Diuron-d6	101	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1941073

Field Sample ID: G1TLHR0067-2017-09

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160
USGS O-2060-01	2,4-D-d3	59.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	84.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	128	P	30 - 160
USGS O-2060-01	Diuron-d6	101	P	30 - 160
USGS O-2060-01	Primidone-d5	120	P	30 - 160
USGS O-2060-01	Sucralose-d6	105	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A79980

Included Lab Sample IDs: 1941073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	118	115	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A80527

Included Lab Sample IDs: 1941073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.6	97.3	P/P	50 - 150
Bentazon	110	113	P/P	50 - 150
MCP	93.1	96.8	P/P	50 - 150
Triclopyr	93.4	86.6	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A80584

Included Lab Sample IDs: 1941073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	97.6	99.0	P/P	60 - 150
Carbamazepine	112	111	P/P	60 - 150
Diuron	105	104	P/P	60 - 150
Fenuron	104	107	P/P	60 - 150
Fluridone	112	112	P/P	60 - 160
Imidacloprid	105	101	P/P	60 - 150
Linuron	107	110	P/P	60 - 150
Primidone	100	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		LCS	Precision SMP	MS
EPA 8321B	Sucralose	114	88.8	97.9			9.28
USGS O-2060-01	2,4-D	101	84.2	80.2			4.91
	Acetaminophen	89.6	98.3	103			4.98
	Bentazon	93.5	83.8	80.9			3.52
	Carbamazepine	114	133	136			2.78
	Diuron	107	105	109			3.60
	Fenuron	108	107	102			4.64
	Fluridone	110	112	114			1.61
	Imidacloprid	106	147	150			1.88
	Linuron	110	109	114			4.36
	MCPP	94.7	64.0	60.9			4.91
	Primidone	104	125	124			0.498
	Triclopyr	94.6	60.1	58.3			3.14

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1941073
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1941073
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1941073

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/30/2017	11/01/2017	Juyoung Kim	11/02/2017	Juyoung Kim	1941073
USGS O-2060-01	10/30/2017	11/01/2017	Hoor Shaik	11/04/2017	Julie Michelle Frank	1941073
	10/30/2017	11/27/2017	Hoor Shaik	11/28/2017	Julie Michelle Frank	1941073