

Chemical Analysis Report

TLH-ROC-2017-11-29-01

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-BACR (728 Sweetwater)**
Request ID: **RQ-2017-10-30-58**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-DEC-2017 15:11

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: SWEETWATER CREEK @ CR270

Collection Date/Time: 11/29/2017 10:10

Field ID: G2TLHR0018-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949275	EPA 8321B	Sucralose**	0.012	I	ug/L	P336172	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P336034	
		Diuron	8.0E-04	U	ug/L	P336034	
		Fenuron	0.0080	U	ug/L	P336034	
		Imidacloprid	8.0E-04	U	ug/L	P336034	MS
		Bentazon	8.0E-04	U	ug/L	P336034	
		Linuron	0.0040	U	ug/L	P336034	
		Acetaminophen**	0.0080	U	ug/L	P336034	
		MCP	0.0020	U	ug/L	P336034	
		Carbamazepine**	4.0E-04	U	ug/L	P336034	
		Triclopyr**	0.0040	U	ug/L	P336034	
		Primidone**	0.0040	U	ug/L	P336034	
		Fluridone**	4.0E-04	U	ug/L	P336034	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P336172

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P336034

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	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
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P336172

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P336034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.6		P	40 - 150
Acetaminophen	115		P	30 - 150
Bentazon	75.8		P	30 - 150
Carbamazepine	109		P	40 - 150
Diuron	106		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	105		P	40 - 150
Imidacloprid	98.3		P	40 - 160
Linuron	100		P	40 - 150
MCP	92.1		P	40 - 150
Primidone	93.9		P	40 - 150
Triclopyr	89.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P336172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950024	Sucralose	78.0	81.0	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P336034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948788	2,4-D	70.0	71.5	P/P	40 - 150
1948788	Acetaminophen	122	125	P/P	30 - 150
1948788	Bentazon	45.1	44.6	P/P	30 - 150
1948788	Carbamazepine	90.4	93.1	P/P	40 - 150
1948788	Diuron	85.6	88.0	P/P	40 - 150
1948788	Fenuron	66.5	74.1	P/P	40 - 150
1948788	Fluridone	89.7	94.3	P/P	40 - 150
1948788	Imidacloprid	164	174	F/F	40 - 160
1948788	Linuron	99.0	99.5	P/P	40 - 150
1948788	MCP	59.4	58.1	P/P	40 - 150
1948788	Primidone	82.9	82.9	P/P	40 - 150
1948788	Triclopyr	61.3	57.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P336172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950024	Sucralose	3.59	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P336034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948788	2,4-D	2.26	Spike	P	0 - 30
1948788	Acetaminophen	2.70	Spike	P	0 - 30
1948788	Bentazon	1.00	Spike	P	0 - 30
1948788	Carbamazepine	2.94	Spike	P	0 - 30
1948788	Diuron	2.72	Spike	P	0 - 30
1948788	Fenuron	8.74	Spike	P	0 - 30
1948788	Fluridone	5.01	Spike	P	0 - 30
1948788	Imidacloprid	5.83	Spike	P	0 - 30
1948788	Linuron	0.427	Spike	P	0 - 30
1948788	MCP	2.11	Spike	P	0 - 30
1948788	Primidone	0.0415	Spike	P	0 - 30
1948788	Triclopyr	6.48	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: 1949275
Field Sample ID: G2TLHR0018-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	101	P	30 - 160
EPA 8321B	Primidone-d5	98.8	P	30 - 160
EPA 8321B	Sucralose-d6	21.7	F	40 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160
USGS O-2060-01	2,4-D-d3	88.6	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	104	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	101	P	30 - 160
USGS O-2060-01	Primidone-d5	98.8	P	30 - 160
USGS O-2060-01	Sucralose-d6	21.7	F	40 - 160
USGS O-2060-01	Sucralose-d6	104	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A80693
Included Lab Sample IDs: 1949275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.9	98.5	P/P	50 - 150
Acetaminophen	117	115	P/P	60 - 150
Bentazon	99.4	100	P/P	50 - 150
Carbamazepine	115	113	P/P	60 - 150
Diuron	111	104	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A80693
Included Lab Sample IDs: 1949275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	114	112	P/P	60 - 150
Fluridone	117	116	P/P	60 - 160
Imidacloprid	108	103	P/P	60 - 150
Linuron	110	115	P/P	60 - 150
MCPP	94.3	98.8	P/P	50 - 150
Primidone	119	114	P/P	60 - 150
Triclopyr	87.7	90.6	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A80747
Included Lab Sample IDs: 1949275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	114	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	78.0 81.0			3.59
USGS O-2060-01	2,4-D	97.6	70.0 71.5			2.26
	Acetaminophen	115	125 122			2.70
	Bentazon	75.8	45.1 44.6			1.00
	Carbamazepine	109	93.1 90.4			2.94
	Diuron	106	88.0 85.6			2.72
	Fenuron	109	74.1 66.5			8.74
	Fluridone	105	94.3 89.7			5.01
	Imidacloprid	98.3	174 164			5.83
	Linuron	100	99.5 99.0			0.427
	MCPP	92.1	59.4 58.1			2.11
	Primidone	93.9	82.9 82.9			0.0415
	Triclopyr	89.1	61.3 57.4			6.48

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1949275
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1949275
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1949275

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/29/2017	12/06/2017	Juyoung Kim	12/06/2017	Juyoung Kim	1949275
USGS O-2060-01	11/29/2017	12/04/2017	Hoor Shaik	12/05/2017	Julie Michelle Frank	1949275
	11/29/2017	12/04/2017	Hoor Shaik	12/06/2017	Julie Michelle Frank	1949275