

Chemical Analysis Report

WQAP-2017-08-28-02

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**
Request ID: **RQ-2017-08-14-47**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-SEP-2017 15:55

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Lake Overstreet Drain @ N Meridian Rd

Collection Date/Time: 08/28/2017 10:35

Field ID: G1TLHR0069-2017-06

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925835	EPA 8321B	Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330883	
		Diuron	8.0E-04	U	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	8.0E-04	U	ug/L	P330883	
		Bentazon	8.0E-04	U	ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	
		MCP	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD

Sample Location: Bear Creek @ SR 267

Collection Date/Time: 08/28/2017 11:15

Field ID: G1TLHR0052-2017-06

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925836	EPA 8321B	Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330883	
		Diuron	8.0E-04	U	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	8.0E-04	U	ug/L	P330883	
		Bentazon	8.0E-04	U	ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	
		MCP	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD

Sample Location: Big Creek @ CR 2224

Collection Date/Time: 08/28/2017 11:45

Field ID: G1TLHR0057-2017-04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925837	EPA 8321B	Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0026	I	ug/L	P330883	
		Diuron	8.0E-04	U	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	0.0016	I	ug/L	P330883	
		Bentazon	8.0E-04	U	ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	

Field ID: G1TLHR0057-2017-04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925837	USGS O-2060-01	MCP	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD

Sample Location: Big Creek @ SR 65

Collection Date/Time: 08/28/2017 12:05

Field ID: G1TLHR0056-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1925838	EPA 8321B	Sucralose**	0.010	U	ug/L	P330900	MS
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330883	
		Diuron	8.0E-04	U	ug/L	P330883	
		Fenuron	0.0080	U	ug/L	P330883	MS
		Imidacloprid	8.0E-04	U	ug/L	P330883	
		Bentazon	8.0E-04	U	ug/L	P330883	MS
		Linuron	0.0040	U	ug/L	P330883	
		Acetaminophen**	0.0080	U	ug/L	P330883	
		MCP	0.0020	U	ug/L	P330883	
		Carbamazepine**	4.0E-04	U	ug/L	P330883	
		Triclopyr**	0.0040	U	ug/L	P330883	
		Primidone**	0.0040	U	ug/L	P330883	
		Fluridone**	4.0E-04	U	ug/L	P330883	MS, RPD

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P330900

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P330883

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: P330900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	42.2		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P330883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Acetaminophen	142		P	30 - 150
Bentazon	62.2		P	40 - 150
Carbamazepine	132		P	40 - 150
Diuron	108		P	40 - 150
Fenuron	123		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	104		P	40 - 160
Linuron	92.2		P	40 - 150
MCP	121		P	40 - 150
Primidone	133		P	40 - 150
Triclopyr	111		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P330900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924465	Sucralose	36.4	28.4	F/F	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P330883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924466	2,4-D	102	100	P/P	40 - 150
1924466	Acetaminophen	136	140	P/P	30 - 150
1924466	Bentazon	12.4	13.4	F/F	40 - 150
1924466	Carbamazepine	79.0	88.4	P/P	40 - 150
1924466	Diuron	44.5	48.1	P/P	40 - 150
1924466	Fenuron	40.2	38.6	P/F	40 - 150
1924466	Fluridone	20.6	32.6	F/F	40 - 150
1924466	Imidacloprid	130	146	P/P	40 - 160
1924466	Linuron	58.7	65.4	P/P	40 - 150
1924466	MCP	128	134	P/P	40 - 150
1924466	Primidone	54.8	65.7	P/P	40 - 150
1924466	Triclopyr	104	118	P/P	40 - 150

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P330900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924465	Sucralose	10.1	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P330883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924466	2,4-D	1.78	Spike	P	0 - 30
1924466	Acetaminophen	2.62	Spike	P	0 - 30
1924466	Bentazon	7.76	Spike	P	0 - 30
1924466	Carbamazepine	11.3	Spike	P	0 - 30
1924466	Diuron	7.69	Spike	P	0 - 30
1924466	Fenuron	4.01	Spike	P	0 - 30
1924466	Fluridone	45.0	Spike	F	0 - 30
1924466	Imidacloprid	11.7	Spike	P	0 - 30
1924466	Linuron	10.7	Spike	P	0 - 30
1924466	MCP	4.67	Spike	P	0 - 30
1924466	Primidone	18.0	Spike	P	0 - 30
1924466	Triclopyr	12.3	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: 1925835
Field Sample ID: G1TLHR0069-2017-06

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	141	P	30 - 160
EPA 8321B	Diuron-d6	92.5	P	30 - 160
EPA 8321B	Primidone-d5	96.5	P	30 - 160
EPA 8321B	Sucralose-d6	40.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	92.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	111	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	141	P	30 - 160
USGS O-2060-01	Diuron-d6	92.5	P	30 - 160
USGS O-2060-01	Primidone-d5	96.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	40.3	P	40 - 160

Lab Sample ID: 1925836
Field Sample ID: G1TLHR0052-2017-06

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	99.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	140	P	30 - 160
EPA 8321B	Diuron-d6	88.2	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1925836

Field Sample ID: G1TLHR0052-2017-06

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	42.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	109	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	99.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	140	P	30 - 160
USGS O-2060-01	Diuron-d6	88.2	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 160
USGS O-2060-01	Sucralose-d6	42.4	P	40 - 160

Lab Sample ID: 1925837

Field Sample ID: G1TLHR0057-2017-04

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	91.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	69.6	P	30 - 160
EPA 8321B	Primidone-d5	79.0	P	30 - 160
EPA 8321B	Sucralose-d6	44.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	107	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	91.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 160
USGS O-2060-01	Diuron-d6	69.6	P	30 - 160
USGS O-2060-01	Primidone-d5	79.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	44.4	P	40 - 160

Lab Sample ID: 1925838

Field Sample ID: G1TLHR0056-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	93.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	146	P	30 - 160
EPA 8321B	Diuron-d6	85.5	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	52.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	134	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	93.1	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	146	P	30 - 160
USGS O-2060-01	Diuron-d6	85.5	P	30 - 160
USGS O-2060-01	Primidone-d5	111	P	30 - 160
USGS O-2060-01	Sucralose-d6	52.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A78750

Included Lab Sample IDs: 1925838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78765

Included Lab Sample IDs: 1925835, 1925836, 1925837, 1925838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	126	121	P/P	50 - 150
Acetaminophen	110	103	P/P	60 - 150
Bentazon	82.7	82.6	P/P	50 - 150
MCP	145	136	P/P	50 - 150
Triclopyr	138	144	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A787749

Included Lab Sample IDs: 1925835, 1925836, 1925837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	120	128	P/P	60 - 150
Sucralose	128	127	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A78805

Included Lab Sample IDs: 1925835, 1925836, 1925837, 1925838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	127	119	P/P	60 - 150
Diuron	109	105	P/P	60 - 150
Fenuron	93.9	96.4	P/P	60 - 150
Fluridone	101	98.4	P/P	60 - 160
Imidacloprid	110	105	P/P	60 - 150
Linuron	89.7	98.7	P/P	60 - 150
Primidone	126	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	42.2	36.4	28.4		10.1
USGS O-2060-01	2,4-D	113	102	100		1.78
	Acetaminophen	142	136	140		2.62
	Bentazon	62.2	12.4	13.4		7.76
	Carbamazepine	132	79.0	88.4		11.3
	Diuron	108	44.5	48.1		7.69
	Fenuron	123	40.2	38.6		4.01
	Fluridone	101	20.6	32.6		45.0
	Imidacloprid	104	130	146		11.7
	Linuron	92.2	58.7	65.4		10.7
	MCP	121	128	134		4.67
	Primidone	133	54.8	65.7		18.0
	Triclopyr	111	104	118		12.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1925835, 1925836, 1925837, 1925838
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1925835, 1925836, 1925837, 1925838
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1925835, 1925836, 1925837, 1925838

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/28/2017	08/30/2017	Hoor Shaik	08/31/2017	Juyoung Kim	1925835, 1925836, 1925837
	08/28/2017	08/30/2017	Hoor Shaik	09/01/2017	Julie Michelle Frank	1925838
USGS O-2060-01	08/28/2017	08/30/2017	Hoor Shaik	09/02/2017	Juyoung Kim	1925835, 1925836, 1925837, 1925838