

Chemical Analysis Report

WQAP-2017-08-21-02

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
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Tallahassee, FL 32399-2400
Attn: Michael Eckles

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 13-SEP-2017 14:17



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: BEAR CREEK @ SR 267

Collection Date/Time: 08/21/2017 11:30

Field ID: G1TLHR0052-2017-06

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1922811	EPA 8321B	Sucralose**	0.010	U	ug/L	P330492	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P330602	
		Diuron	8.0E-04	U	ug/L	P330602	
		Fenuron	0.0080	U	ug/L	P330602	
		Imidacloprid	8.0E-04	U	ug/L	P330602	
		Bentazon	8.0E-04	U	ug/L	P330602	
		Linuron	0.0040	U	ug/L	P330602	
		Acetaminophen**	0.0080	U	ug/L	P330602	MS
		MCP	0.0020	U	ug/L	P330602	
		Carbamazepine**	4.0E-04	U	ug/L	P330602	
		Triclopyr**	0.0040	U	ug/L	P330602	
		Primidone**	0.0040	U	ug/L	P330602	
		Fluridone**	4.0E-04	U	ug/L	P330602	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for diuron and imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: BIG CREEK @ CR 2224

Collection Date/Time: 08/21/2017 12:05

Field ID: G1TLHR0057-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1922812	EPA 8321B	Sucralose**	0.020	U	ug/L	P330492	
	USGS O-2060-01	2,4-D	0.11		ug/L	P330602	
		Diuron	8.0E-04	U	ug/L	P330602	
		Fenuron	0.0080	U	ug/L	P330602	
		Imidacloprid	0.052		ug/L	P330602	
		Bentazon	8.0E-04	U	ug/L	P330602	
		Linuron	0.0040	U	ug/L	P330602	
		Acetaminophen**	0.0080	U	ug/L	P330602	MS
		MCP	0.0020	U	ug/L	P330602	
		Carbamazepine**	4.0E-04	U	ug/L	P330602	
		Triclopyr**	0.0040	U	ug/L	P330602	
		Primidone**	0.0040	U	ug/L	P330602	
		Fluridone**	4.0E-04	U	ug/L	P330602	

Ref. Method and Comment:

EPA 8321B: MDL elevated due to matrix interference.

USGS O-2060-01: MS accuracy for diuron and imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P330492

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P330602

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: P330492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	118		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P330602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.1		P	40 - 150
Acetaminophen	149		P	30 - 150
Bentazon	104		P	40 - 150
Carbamazepine	118		P	40 - 150
Diuron	109		P	40 - 150
Fenuron	123		P	40 - 150
Fluridone	87.3		P	40 - 150
Imidacloprid	131		P	40 - 160
Linuron	110		P	40 - 150
MCP	76.2		P	40 - 150
Primidone	116		P	40 - 150
Triclopyr	73.9		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P330492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1922732	Sucralose	97.6	121	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P330602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1922735	2,4-D	114	97.9	P/P	40 - 150
1922735	Acetaminophen	157	137	F/P	30 - 150
1922735	Bentazon	57.0	59.5	P/P	40 - 150
1922735	Carbamazepine	127	130	P/P	40 - 150
1922735	Fenuron	76.9	74.8	P/P	40 - 150
1922735	Fluridone	80.7	75.2	P/P	40 - 150
1922735	Linuron	108	100	P/P	40 - 150
1922735	MCP	93.0	79.0	P/P	40 - 150
1922735	Primidone	115	113	P/P	40 - 150
1922735	Triclopyr	79.3	95.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P330492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1922732	Sucralose	4.68	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P330602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1922735	2,4-D	14.7	Spike	P	0 - 30
1922735	Acetaminophen	13.2	Spike	P	0 - 30
1922735	Bentazon	4.01	Spike	P	0 - 30
1922735	Carbamazepine	2.62	Spike	P	0 - 30
1922735	Diuron	18.6	Spike	P	0 - 30
1922735	Fenuron	2.74	Spike	P	0 - 30
1922735	Fluridone	7.01	Spike	P	0 - 30
1922735	Imidacloprid	5.59	Spike	P	0 - 30
1922735	Linuron	7.66	Spike	P	0 - 30
1922735	MCP	16.2	Spike	P	0 - 30
1922735	Primidone	1.30	Spike	P	0 - 30
1922735	Triclopyr	19.0	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: 1922811
Field Sample ID: G1TLHR0052-2017-06

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	138	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1922811

Field Sample ID: G1TLHR0052-2017-06

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	110	P	30 - 160
EPA 8321B	Primidone-d5	130	P	30 - 160
EPA 8321B	Sucralose-d6	72.7	P	40 - 160
USGS O-2060-01	2,4-D-d3	128	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	116	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	138	P	30 - 160
USGS O-2060-01	Diuron-d6	110	P	30 - 160
USGS O-2060-01	Primidone-d5	130	P	30 - 160
USGS O-2060-01	Sucralose-d6	72.7	P	40 - 160

Lab Sample ID: 1922812

Field Sample ID: G1TLHR0057-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	83.5	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	52.7	P	40 - 160
USGS O-2060-01	2,4-D-d3	128	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	132	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	83.5	P	30 - 160
USGS O-2060-01	Primidone-d5	113	P	30 - 160
USGS O-2060-01	Sucralose-d6	52.7	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78635

Included Lab Sample IDs: 1922811, 1922812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.7	93.6	P/P	50 - 150
Acetaminophen	119	129	P/P	60 - 150
Bentazon	131	131	P/P	50 - 150
Carbamazepine	96.2	107	P/P	60 - 150
Diuron	105	118	P/P	60 - 150
Fenuron	116	117	P/P	60 - 150
Fluridone	114	114	P/P	60 - 160
Imidacloprid	121	123	P/P	60 - 150
Linuron	141	122	P/P	60 - 150
MCP	105	90.6	P/P	50 - 150
Primidone	99.6	128	P/P	60 - 150
Triclopyr	95.8	99.6	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A78774
Included Lab Sample IDs: 1922811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	123	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A78802
Included Lab Sample IDs: 1922812

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	134	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	118	97.6 121			4.68
USGS O-2060-01	2,4-D	74.1	114 97.9			14.7
	Acetaminophen	149	157 137			13.2
	Bentazon	104	57.0 59.5			4.01
	Carbamazepine	118	127 130			2.62
	Diuron	109				18.6
	Fenuron	123	76.9 74.8			2.74
	Fluridone	87.3	80.7 75.2			7.01
	Imidacloprid	131				5.59
	Linuron	110	108 100			7.66
	MCP	76.2	79.0 93.0			16.2
	Primidone	116	115 113			1.30
	Triclopyr	73.9	79.3 95.9			19.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1922811, 1922812
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1922811, 1922812
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1922811, 1922812

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/21/2017	08/25/2017	Hoor Shaik	09/01/2017	Julie Michelle Frank	1922811
	08/21/2017	08/25/2017	Hoor Shaik	09/05/2017	Julie Michelle Frank	1922812
USGS O-2060-01	08/21/2017	08/23/2017	Hoor Shaik	08/25/2017	Juyoung Kim	1922811, 1922812