

Chemical Analysis Report

TLH-ROC-2017-12-27-01

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**

Request ID: **RQ-2017-12-04-49**

Customer: **TLH-ROC**

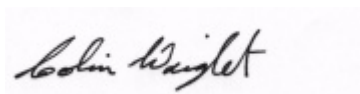
Project ID: **SMP**

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: Colin Wright, Program Administrator

Date Certified: 09-JAN-2018 12:17

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned on a light gray rectangular 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: Flat Creek @ CR269

Collection Date/Time: 12/27/2017 09:40

Field ID: G2TLHR0020-2017-05

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956221	EPA 8321B	Sucralose**	0.042		ug/L	P337657	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337440	
		Diuron	8.0E-04	U	ug/L	P337440	
		Fenuron	0.0080	U	ug/L	P337440	
		Imidacloprid	8.0E-04	U	ug/L	P337440	MS
		Bentazon	8.0E-04	U	ug/L	P337440	
		Linuron	0.0040	U	ug/L	P337440	
		Acetaminophen**	0.0080	U	ug/L	P337440	
		MCP	0.0020	U	ug/L	P337440	
		Carbamazepine**	4.0E-04	U	ug/L	P337440	
		Triclopyr**	0.0040	U	ug/L	P337440	
		Primidone**	0.0040	U	ug/L	P337440	
		Fluridone**	4.0E-04	U	ug/L	P337440	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P337657

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P337440

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: P337657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	93.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P337440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	89.1		P	30 - 150
Carbamazepine	81.6		P	40 - 150
Diuron	69.8		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	74.6		P	40 - 150
Imidacloprid	103		P	40 - 160
Linuron	58.7		P	40 - 150
MCP	85.3		P	40 - 150
Primidone	106		P	40 - 150
Triclopyr	85.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P337657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956295	Sucralose	69.9	75.0	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P337440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955840	2,4-D	67.3	68.1	P/P	40 - 150
1955840	Acetaminophen	142	148	P/P	30 - 150
1955840	Bentazon	41.1	43.2	P/P	30 - 150
1955840	Carbamazepine	102	105	P/P	40 - 150
1955840	Diuron	79.2	86.7	P/P	40 - 150
1955840	Fenuron	96.4	95.7	P/P	40 - 150
1955840	Fluridone	77.7	83.4	P/P	40 - 150
1955840	Imidacloprid	173	173	F/F	40 - 160
1955840	Linuron	70.8	75.2	P/P	40 - 150
1955840	MCP	59.5	57.2	P/P	40 - 150
1955840	Primidone	124	125	P/P	40 - 150
1955840	Triclopyr	55.7	51.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P337657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956295	Sucralose	6.47	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P337440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955840	2,4-D	1.15	Spike	P	0 - 30
1955840	Acetaminophen	3.58	Spike	P	0 - 30
1955840	Bentazon	4.91	Spike	P	0 - 30
1955840	Carbamazepine	3.02	Spike	P	0 - 30
1955840	Diuron	8.87	Spike	P	0 - 30
1955840	Fenuron	0.750	Spike	P	0 - 30
1955840	Fluridone	7.00	Spike	P	0 - 30
1955840	Imidacloprid	0.0267	Spike	P	0 - 30
1955840	Linuron	5.94	Spike	P	0 - 30
1955840	MCP	3.96	Spike	P	0 - 30
1955840	Primidone	1.15	Spike	P	0 - 30
1955840	Triclopyr	7.33	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: 1956221
Field Sample ID: G2TLHR0020-2017-05

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.1	P	30 - 160
EPA 8321B	Diuron-d6	76.8	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	86.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	78.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	114	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	97.1	P	30 - 160
USGS O-2060-01	Diuron-d6	76.8	P	30 - 160
USGS O-2060-01	Primidone-d5	124	P	30 - 160
USGS O-2060-01	Sucralose-d6	86.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A81275
Included Lab Sample IDs: 1956221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	73.1	90.2	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A81280
Included Lab Sample IDs: 1956221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A81280

Included Lab Sample IDs: 1956221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.1	92.7	P/P	50 - 150
Acetaminophen	96.2	108	P/P	60 - 150
Bentazon	91.2	89.5	P/P	50 - 150
Carbamazepine	101	111	P/P	60 - 150
Diuron	102	101	P/P	60 - 150
Fenuron	99.3	111	P/P	60 - 150
Fluridone	96.3	112	P/P	60 - 160
Imidacloprid	97.3	105	P/P	60 - 150
Linuron	98.2	116	P/P	60 - 150
MCP	97.2	93.0	P/P	50 - 150
Primidone	89.7	95.9	P/P	60 - 150
Triclopyr	90.0	86.3	P/P	50 - 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	93.9	69.9 75.0			6.47
USGS O-2060-01	2,4-D	88.1	68.1 67.3			1.15
	Acetaminophen	106	142 148			3.58
	Bentazon	89.1	43.2 41.1			4.91
	Carbamazepine	81.6	102 105			3.02
	Diuron	69.8	79.2 86.7			8.87
	Fenuron	111	96.4 95.7			0.750
	Fluridone	74.6	77.7 83.4			7.00
	Imidacloprid	103	173 173			0.0267
	Linuron	58.7	70.8 75.2			5.94
	MCP	85.3	57.2 59.5			3.96
	Primidone	106	124 125			1.15
	Triclopyr	85.7	51.8 55.7			7.33

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1956221
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1956221
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1956221

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/27/2017	01/03/2018	Mohammad Ghaffari	01/03/2018	Mohammad Ghaffari	1956221
USGS O-2060-01	12/27/2017	12/28/2017	Julie Michelle Frank	12/28/2017	Julie Michelle Frank	1956221
	12/27/2017	12/28/2017	Julie Michelle Frank	12/29/2017	Julie Michelle Frank	1956221