

Chemical Analysis Report

WQAP-2017-06-26-02

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

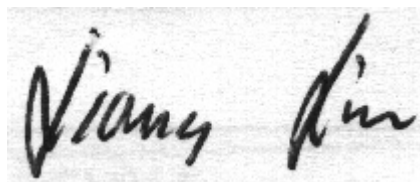
Event Description: **B/T/M only**
Request ID: **RQ-2017-04-17-32**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUL-2017 17:13

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: Otter Creek @ NW Newsome Rd.

Collection Date/Time: 06/26/2017 11:10

Field ID: G2TLHR0019-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908824	EPA 8321B	Sucralose**	0.018	I	ug/L	P327309	
	USGS O-2060-01	2,4-D	0.0014	I	ug/L	P327564	
		Diuron	8.0E-04	U	ug/L	P327564	
		Fenuron	0.0080	U	ug/L	P327564	MS, RPD
		Imidacloprid	8.0E-04	U	ug/L	P327564	
		Bentazon	8.0E-04	U	ug/L	P327564	
		Linuron	0.0040	U	ug/L	P327564	
		Acetaminophen**	0.0080	U	ug/L	P327564	
		MCP	0.0020	U	ug/L	P327564	
		Carbamazepine**	4.0E-04	U	ug/L	P327564	
		Triclopyr**	0.0040	U	ug/L	P327564	
		Primidone**	0.0040	U	ug/L	P327564	RPD
		Fluridone**	4.0E-04	U	ug/L	P327564	

Ref. Method and Comment:

EPA 8321B: Accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Sweetwater Creek @ CR270

Collection Date/Time: 06/26/2017 12:10

Field ID: G2TLHR0018-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908825	EPA 8321B	Sucralose**	0.010	U	ug/L	P327556	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327564	
		Diuron	8.0E-04	U	ug/L	P327564	
		Fenuron	0.0080	U	ug/L	P327564	MS, RPD
		Imidacloprid	8.0E-04	U	ug/L	P327564	
		Bentazon	8.0E-04	U	ug/L	P327564	
		Linuron	0.0040	U	ug/L	P327564	
		Acetaminophen**	0.0080	U	ug/L	P327564	
		MCP	0.0020	U	ug/L	P327564	
		Carbamazepine**	4.0E-04	U	ug/L	P327564	
		Triclopyr**	0.0040	U	ug/L	P327564	
		Primidone**	0.0040	U	ug/L	P327564	RPD
		Fluridone**	4.0E-04	U	ug/L	P327564	

Sample Location: Mule Creek @ SR12

Collection Date/Time: 06/26/2017 13:35

Field ID: G1TLHR0063-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908826	EPA 8321B	Sucralose**	0.010	U	ug/L	P327556	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327564	
		Diuron	8.0E-04	U	ug/L	P327564	
		Fenuron	0.0080	U	ug/L	P327564	MS, RPD
		Imidacloprid	8.0E-04	U	ug/L	P327564	
		Bentazon	8.0E-04	U	ug/L	P327564	
		Linuron	0.0040	U	ug/L	P327564	

Field ID: G1TLHR0063-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908826	USGS O-2060-01	Acetaminophen**	0.0080	U	ug/L	P327564	
		MCP	0.0020	U	ug/L	P327564	
		Carbamazepine**	4.0E-04	U	ug/L	P327564	
		Triclopyr**	0.0040	U	ug/L	P327564	
		Primidone**	0.0040	U	ug/L	P327564	RPD
		Fluridone**	4.0E-04	U	ug/L	P327564	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P327309

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P327556

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P327564

Component	Result	Code	Units
2,4-D	8.0E-04	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: P327309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.0		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P327556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.0		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P327564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.8		P	40 - 150
Acetaminophen	49.8		P	30 - 150
Bentazon	88.2		P	40 - 150
Carbamazepine	92.4		P	40 - 150
Diuron	95.2		P	40 - 150
Fenuron	82.0		P	40 - 150
Fluridone	96.0		P	40 - 150
Imidacloprid	77.8		P	40 - 160
Linuron	78.4		P	40 - 150
MCP	84.6		P	40 - 150
Primidone	51.8		P	40 - 150
Triclopyr	79.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P327556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908842	Sucralose	70.8	89.8	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P327564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908555	2,4-D	113	106	P/P	40 - 150
1908555	Acetaminophen	84.8	84.8	P/P	30 - 150
1908555	Bentazon	43.8	48.2	P/P	40 - 150
1908555	Carbamazepine	99.2	103	P/P	40 - 150
1908555	Diuron	60.4	68.4	P/P	40 - 150
1908555	Fenuron	159	87.6	F/P	40 - 150
1908555	Fluridone	50.6	57.4	P/P	40 - 150
1908555	Imidacloprid	68.4	107	P/P	40 - 160
1908555	Linuron	61.4	63.6	P/P	40 - 150
1908555	MCP	79.0	74.6	P/P	40 - 150
1908555	Primidone	58.6	89.8	P/P	40 - 150
1908555	Triclopyr	95.8	79.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P327309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908246	Sucralose	4.67	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P327556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908842	Sucralose	23.0	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P327564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908555	2,4-D	5.29	Spike	P	0 - 30
1908555	Acetaminophen	0.0	Spike	P	0 - 30
1908555	Bentazon	2.18	Spike	P	0 - 30
1908555	Carbamazepine	3.76	Spike	P	0 - 30
1908555	Diuron	9.50	Spike	P	0 - 30
1908555	Fenuron	46.9	Spike	F	0 - 30
1908555	Fluridone	8.74	Spike	P	0 - 30
1908555	Imidacloprid	7.29	Spike	P	0 - 30
1908555	Linuron	3.52	Spike	P	0 - 30
1908555	MCP	5.73	Spike	P	0 - 30
1908555	Primidone	42.0	Spike	F	0 - 30
1908555	Triclopyr	18.7	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: 1908824
 Field Sample ID: G2TLHR0019-2017-01

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	77.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	110	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	83.5	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	112	P	30 - 160
USGS O-2060-01	Diuron-d6	78.1	P	30 - 160
USGS O-2060-01	Primidone-d5	54.1	P	30 - 150

Lab Sample ID: 1908825
 Field Sample ID: G2TLHR0018-2017-01

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	75.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	121	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	87.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	153	P	30 - 160
USGS O-2060-01	Diuron-d6	96.9	P	30 - 160
USGS O-2060-01	Primidone-d5	71.6	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1908826

Field Sample ID: G1TLHR0063-2017-01

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	77.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	113	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	89.9	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 160
USGS O-2060-01	Diuron-d6	65.9	P	30 - 160
USGS O-2060-01	Primidone-d5	58.9	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A77414

Included Lab Sample IDs: 1908824, 1908825, 1908826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	128	P/P	60 - 160
Sucralose	79.0	105	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A77687

Included Lab Sample IDs: 1908824, 1908825, 1908826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.0	92.4	P/P	50 - 150
Acetaminophen	72.4	68.0	P/P	60 - 150
Bentazon	102	141	P/P	50 - 150
Carbamazepine	94.8	89.6	P/P	60 - 150
Diuron	95.2	102	P/P	60 - 150
Fenuron	82.0	69.6	P/P	60 - 150
Fluridone	107	108	P/P	60 - 160
Imidacloprid	76.0	76.0	P/P	60 - 150
Linuron	86.0	77.2	P/P	60 - 150
MCP	78.8	89.2	P/P	50 - 150
Primidone	74.0	64.8	P/P	60 - 150
Triclopyr	74.8	82.8	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	83.0				4.67
	Sucralose	83.0	70.8 89.8			23.0
USGS O-2060-01	2,4-D	78.8	113 106			5.29
	Acetaminophen	49.8	84.8 84.8			0.0
	Bentazon	88.2	43.8 48.2			2.18
	Carbamazepine	92.4	99.2 103			3.76

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
USGS O-2060-01	Diuron	95.2	60.4	68.4		9.50
	Fenuron	82.0	159	87.6		46.9
	Fluridone	96.0	50.6	57.4		8.74
	Imidacloprid	77.8	68.4	107		7.29
	Linuron	78.4	61.4	63.6		3.52
	MCP	84.6	79.0	74.6		5.73
	Primidone	51.8	58.6	89.8		42.0
	Triclopyr	79.0	95.8	79.4		18.7

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1908824, 1908825, 1908826
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1908824, 1908825, 1908826
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1908824, 1908825, 1908826

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/26/2017	06/28/2017	Mohammad Ghaffari	06/28/2017	Mohammad Ghaffari	1908824, 1908825, 1908826
USGS O-2060-01	06/26/2017	06/28/2017	Hoor Shaik	07/10/2017	Juyoung Kim	1908824, 1908825, 1908826