

Chemical Analysis Report

WQAP-2017-06-12-03

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

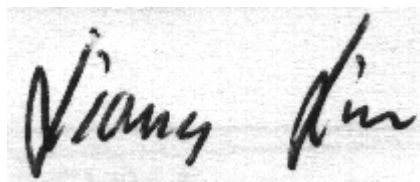
Event Description: **B/T/M only (WBID 977) Moore Branch**
Request ID: **RQ-2017-05-22-39**
Customer: **WQAP**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 03-JUL-2017 11:30

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: Moore Branch @ Cody Church Rd.

Collection Date/Time: 06/12/2017 10:55

Field ID: G1TLHR0041-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905383	EPA 8321B	Sucralose**	0.010	U	ug/L	P326632	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326471	
		Diuron	8.0E-04	U	ug/L	P326471	
		Fenuron	0.0040	U	ug/L	P326471	
		Imidacloprid	8.0E-04	U	ug/L	P326471	MS
		Bentazon	8.0E-04	U	ug/L	P326471	MS
		Linuron	0.0040	U	ug/L	P326471	
		Acetaminophen**	0.0080	U	ug/L	P326471	
		MCP	0.0020	U	ug/L	P326471	
		Carbamazepine**	4.0E-04	U	ug/L	P326471	
		Triclopyr**	0.0040	U	ug/L	P326471	
		Primidone**	0.0040	U	ug/L	P326471	
		Fluridone**	4.0E-04	U	ug/L	P326471	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P326632

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P326471

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	0.0040	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: P326632

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: P326471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.0		P	40 - 140
Acetaminophen	70.4		P	40 - 140
Bentazon	77.4		P	40 - 140
Carbamazepine	132		P	40 - 140
Diuron	120		P	40 - 140
Fenuron	113		P	40 - 140
Fluridone	115		P	40 - 140
Imidacloprid	110		P	40 - 160
Linuron	119		P	40 - 140
MCP	95.6		P	40 - 140
Primidone	110		P	40 - 140
Triclopyr	94.2		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P326632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905341	Sucralose	82.0	77.5	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P326471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904436	2,4-D	93.2	87.4	P/P	40 - 140
1904436	Acetaminophen	99.2	115	P/P	40 - 140
1904436	Bentazon	32.4	29.6	F/F	40 - 140
1904436	Carbamazepine	116	111	P/P	40 - 140
1904436	Diuron	88.5	79.9	P/P	40 - 140
1904436	Fenuron	86.9	83.2	P/P	40 - 140
1904436	Fluridone	79.1	71.8	P/P	40 - 140
1904436	Imidacloprid	197	187	F/F	40 - 160
1904436	Linuron	112	98.7	P/P	40 - 140
1904436	MCP	71.4	65.2	P/P	40 - 140
1904436	Primidone	98.8	95.1	P/P	40 - 140
1904436	Triclopyr	75.2	72.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P326632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905341	Sucralose	5.47	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P326471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904436	2,4-D	5.69	Spike	P	0 - 30
1904436	Acetaminophen	14.5	Spike	P	0 - 30
1904436	Bentazon	6.33	Spike	P	0 - 30
1904436	Carbamazepine	4.41	Spike	P	0 - 30
1904436	Diuron	9.47	Spike	P	0 - 30
1904436	Fenuron	4.33	Spike	P	0 - 30
1904436	Fluridone	8.95	Spike	P	0 - 30
1904436	Imidacloprid	4.13	Spike	P	0 - 30
1904436	Linuron	12.4	Spike	P	0 - 30
1904436	MCP	9.08	Spike	P	0 - 30
1904436	Primidone	3.80	Spike	P	0 - 30
1904436	Triclopyr	3.79	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: 1905383
Field Sample ID: G1TLHR0041-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	65.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	96.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	129	P	30 - 160
USGS O-2060-01	Diuron-d6	96.1	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A77208
Included Lab Sample IDs: 1905383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.4	82.8	P/P	50 - 150
Acetaminophen	101	102	P/P	60 - 150
Bentazon	97.6	98.0	P/P	50 - 150
Carbamazepine	115	114	P/P	60 - 150
Diuron	103	105	P/P	60 - 150
Fenuron	107	108	P/P	60 - 150
Fluridone	109	110	P/P	60 - 160
Imidacloprid	98.2	104	P/P	60 - 150
Linuron	107	108	P/P	60 - 150
MCP	80.8	78.0	P/P	50 - 150
Primidone	91.0	103	P/P	60 - 150
Triclopyr	81.2	81.2	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A77273
Included Lab Sample IDs: 1905383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	129	107	P/P	60 - 160

* 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	82.0 77.5			5.47
USGS O-2060-01	2,4-D	90.0	93.2 87.4			5.69
	Acetaminophen	70.4	99.2 115			14.5
	Bentazon	77.4	32.4 29.6			6.33
	Carbamazepine	132	116 111			4.41
	Diuron	120	88.5 79.9			9.47
	Fenuron	113	86.9 83.2			4.33
	Fluridone	115	79.1 71.8			8.95
	Imidacloprid	110	197 187			4.13
	Linuron	119	112 98.7			12.4
	MCP	95.6	71.4 65.2			9.08
	Primidone	110	98.8 95.1			3.80
	Triclopyr	94.2	75.2 72.4			3.79

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1905383
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1905383
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1905383

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/12/2017	06/15/2017	Mohammad Ghaffari	06/21/2017	Mohammad Ghaffari	1905383
USGS O-2060-01	06/12/2017	06/14/2017	Hoor Shaik	06/17/2017	Juyoung Kim	1905383