

Chemical Analysis Report

CEN-DIST-2017-01-27-03

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

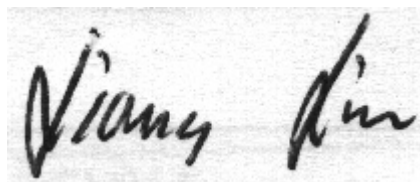
Event Description: **Lil Econ/Lil Wekiva Canal**
Request ID: **RQ-2017-01-23-47**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-FEB-2017 17:11

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Little Econ River S of SR 419 Bridge

Collection Date/Time: 01/26/2017 10:55

Field ID: G2CE0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1867325	EPA 8321B	Sucralose**	3.5		ug/L	P319087	
	USGS O-2060-01	Diuron	0.0094	I	ug/L	P318793	
		Fenuron	0.0080	U	ug/L	P318793	
		Imidacloprid	0.018		ug/L	P318793	
		Linuron	0.0040	U	ug/L	P318793	
		Acetaminophen**	0.0040	U	ug/L	P318793	
		Carbamazepine**	0.024		ug/L	P318793	
		Primidone**	0.029	I	ug/L	P318793	
		Fluridone**	0.045		ug/L	P318793	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P319087

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P318793

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P319087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.2		P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P318793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	78.8		P	40 - 140
Carbamazepine	94.8		P	40 - 140
Diuron	88.4		P	40 - 140
Fenuron	92.4		P	40 - 140
Fluridone	70.0		P	40 - 140
Imidacloprid	94.0		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01

Batch ID: P318793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	74.4		P	40 - 140
Primidone	70.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P319087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1868580	Sucralose	105	112	P/P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P318793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866907	Acetaminophen	72.4	74.4	P/P	40 - 140
1866907	Carbamazepine	99.3	103	P/P	40 - 140
1866907	Diuron	70.8	72.4	P/P	40 - 140
1866907	Fenuron	83.6	86.4	P/P	40 - 140
1866907	Fluridone	50.8	54.8	P/P	40 - 140
1866907	Imidacloprid	130	113	P/P	40 - 160
1866907	Linuron	80.4	73.6	P/P	40 - 140
1866907	Primidone	100	94.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P319087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1868580	Sucralose	6.45	Spike	P	0 - 30

Reference Method: USGS O-2060-01

Batch ID: P318793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866907	Acetaminophen	2.72	Spike	P	0 - 30
1866907	Carbamazepine	3.86	Spike	P	0 - 30
1866907	Diuron	1.79	Spike	P	0 - 30
1866907	Fenuron	3.29	Spike	P	0 - 30
1866907	Fluridone	7.30	Spike	P	0 - 30
1866907	Imidacloprid	12.9	Spike	P	0 - 30
1866907	Linuron	8.83	Spike	P	0 - 30
1866907	Primidone	6.58	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: 1867325
 Field Sample ID: G2CE0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	81.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	66.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	95.2	P	40 - 160
USGS O-2060-01	Diuron-d6	76.2	P	40 - 150
USGS O-2060-01	Primidone-d5	120	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A74237
 Included Lab Sample IDs: 1867325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	112	P/P	60 - 150
Carbamazepine	120	115	P/P	60 - 150
Diuron	118	118	P/P	60 - 150
Fenuron	118	112	P/P	60 - 150
Fluridone	95.6	107	P/P	60 - 150
Imidacloprid	102	84.4	P/P	60 - 150
Linuron	102	111	P/P	60 - 150
Primidone	119	121	P/P	60 - 150

Reference Method: EPA 8321B
 Run ID: A74240
 Included Lab Sample IDs: 1867325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.7	129	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		Precision SMP	MS
			LCS			
EPA 8321B	Sucralose	85.2	105	112		6.45
USGS O-2060-01	Acetaminophen	78.8	72.4	74.4		2.72
	Carbamazepine	94.8	99.3	103		3.86
	Diuron	88.4	70.8	72.4		1.79
	Fenuron	92.4	83.6	86.4		3.29
	Fluridone	70.0	50.8	54.8		7.30
	Imidacloprid	94.0	130	113		12.9
	Linuron	74.4	80.4	73.6		8.83
	Primidone	70.8	100	94.0		6.58

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1867325
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1867325

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/27/2017	02/02/2017	Mohammad Ghaffari	02/02/2017	Mohammad Ghaffari	1867325
USGS O-2060-01	01/27/2017	02/01/2017	Hoor Shaik	02/01/2017	Juyoung Kim	1867325