

Chemical Analysis Report

CEN-DIST-2017-02-17-01

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

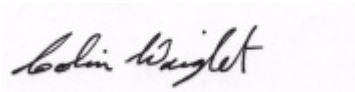
Event Description: **Soldier Creek / Bear Creek**
Request ID: **RQ-2017-02-13-54**
Customer: **CEN-DIST**
Project ID: **SMP**

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

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Certified by: Colin Wright, Program Administrator

Date Certified: 28-FEB-2017 09:57

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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: SOLDIER CREEK @ 100M UPSTREAM OF SR HWY 419 **Collection Date/Time: 02/16/2017 10:35**

Field ID: G2CE0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1873548	EPA 8321B	Sucralose**	1.8		ug/L	P319991	
	USGS O-2060-01	Diuron	0.0080	U	ug/L	P319949	MS
		Fenuron	0.016	U	ug/L	P319949	
		Imidacloprid	0.029	I	ug/L	P319949	
		Linuron	0.0080	U	ug/L	P319949	MS
		Acetaminophen**	0.0040	U	ug/L	P319949	
		Carbamazepine**	0.0055		ug/L	P319949	
		Primidone**	0.0080	U	ug/L	P319949	
		Fluridone**	0.0012	I	ug/L	P319949	MS

Ref. Method and Comment:
 USGS O-2060-01: MDL's for some parameters elevated due to matrix interference.

Sample Location: BEAR CRK JUST NORTH OF WINTER SPRINGS BLVD. IN BEAR CRK PAR **Collection Date/Time: 02/16/2017 11:09**

Field ID: G2CE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1873549	EPA 8321B	Sucralose**	0.48		ug/L	P319991	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319949	MS
		Fenuron	0.0080	U	ug/L	P319949	
		Imidacloprid	0.013	I	ug/L	P319949	
		Linuron	0.0040	U	ug/L	P319949	MS
		Acetaminophen**	0.0040	U	ug/L	P319949	
		Carbamazepine**	9.3E-04	I	ug/L	P319949	
		Primidone**	0.0080	U	ug/L	P319949	
		Fluridone**	0.011		ug/L	P319949	MS

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P319991

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P319949

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: P319991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	99.9		P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P319949

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	73.2		P	40 - 140
Carbamazepine	125		P	40 - 140
Diuron	78.8		P	40 - 140
Fenuron	98.8		P	40 - 140
Fluridone	53.2		P	40 - 140
Imidacloprid	85.2		P	40 - 160
Linuron	65.6		P	40 - 140
Primidone	89.2		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P319991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873584	Sucralose	78.9	63.0	P/P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P319949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873043	Acetaminophen	71.2	64.8	P/P	40 - 140
1873043	Carbamazepine	63.5	50.3	P/P	40 - 140
1873043	Diuron	34.8	34.4	F/F	40 - 140
1873043	Fenuron	45.6	47.6	P/P	40 - 140
1873043	Fluridone	27.6	30.3	F/F	40 - 140
1873043	Imidacloprid	94.0	89.2	P/P	40 - 160
1873043	Linuron	36.1	29.1	F/F	40 - 140
1873043	Primidone	53.6	53.6	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P319991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873584	Sucralose	22.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P319949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873043	Acetaminophen	9.41	Spike	P	0 - 30
1873043	Carbamazepine	17.5	Spike	P	0 - 30
1873043	Diuron	1.04	Spike	P	0 - 30
1873043	Fenuron	4.29	Spike	P	0 - 30
1873043	Fluridone	9.54	Spike	P	0 - 30
1873043	Imidacloprid	5.24	Spike	P	0 - 30
1873043	Linuron	21.6	Spike	P	0 - 30
1873043	Primidone	0.0	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: 1873548
Field Sample ID: G2CE0071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	88.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	50.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	41.4	P	40 - 160
USGS O-2060-01	Diuron-d6	84.4	P	40 - 150
USGS O-2060-01	Primidone-d5	61.0	P	40 - 150

Lab Sample ID: 1873549
Field Sample ID: G2CE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	81.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	69.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	51.0	P	40 - 160
USGS O-2060-01	Diuron-d6	51.2	P	40 - 150
USGS O-2060-01	Primidone-d5	73.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A74589
Included Lab Sample IDs: 1873548, 1873549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	85.8	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A74598
Included Lab Sample IDs: 1873548, 1873549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74598

Included Lab Sample IDs: 1873548, 1873549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	87.6	94.8	P/P	60 - 150
Carbamazepine	140	136	P/P	60 - 150
Diuron	105	103	P/P	60 - 150
Diuron	98.0	101	P/P	60 - 150
Fenuron	106	108	P/P	60 - 150
Fenuron	110	109	P/P	60 - 150
Fluridone	76.0	77.2	P/P	60 - 150
Fluridone	81.6	76.4	P/P	60 - 150
Imidacloprid	86.8	93.6	P/P	60 - 150
Imidacloprid	90.0	88.4	P/P	60 - 150
Linuron	86.4	91.2	P/P	60 - 150
Primidone	113	112	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	MS
						SMP	
EPA 8321B	Sucralose	99.9	78.9	63.0			22.4
USGS O-2060-01	Acetaminophen	73.2	71.2	64.8			9.41
	Carbamazepine	125	63.5	50.3			17.5
	Diuron	78.8	34.8	34.4			1.04
	Fenuron	98.8	45.6	47.6			4.29
	Fluridone	53.2	27.6	30.3			9.54
	Imidacloprid	85.2	94.0	89.2			5.24
	Linuron	65.6	36.1	29.1			21.6
	Primidone	89.2	53.6	53.6			0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1873548, 1873549
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1873548, 1873549

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/17/2017	02/20/2017	Mohammad Ghaffari	02/20/2017	Mohammad Ghaffari	1873548, 1873549
USGS O-2060-01	02/17/2017	02/20/2017	Hoor Shaik	02/21/2017	Juyoung Kim	1873548, 1873549