

Chemical Analysis Report

CEN-DIST-2017-12-29-02

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

Event Description: **Sweetwater / Smith**
Request ID: **RQ-2017-12-25-10**
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: Colin Wright, Program Administrator

Date Certified: 09-JAN-2018 12:49

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: Howell Creek @ 150m US of Lake Howell

Collection Date/Time: 12/28/2017 10:25

Field ID: G2CE0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956535	EPA 8321B	Sucralose**	0.25		ug/L	P337738	
	USGS O-2060-01	2,4-D	0.051		ug/L	P337734	
		Diuron	0.0024	I	ug/L	P337734	
		Fenuron	0.0080	U	ug/L	P337734	
		Imidacloprid	0.0029	I	ug/L	P337734	
		Bentazon	0.047		ug/L	P337734	
		Linuron	0.0040	U	ug/L	P337734	
		Acetaminophen**	0.0080	U	ug/L	P337734	
		MCP	0.0020	U	ug/L	P337734	
		Carbamazepine**	6.1E-04	I	ug/L	P337734	
		Triclopyr**	0.0040	U	ug/L	P337734	
		Primidone**	0.0040	U	ug/L	P337734	
		Fluridone**	0.019		ug/L	P337734	

Sample Location: Sweetwater Creek @ US of DeLeon St.

Collection Date/Time: 12/28/2017 11:23

Field ID: G2CE0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956536	EPA 8321B	Sucralose**	2.2		ug/L	P337738	
	USGS O-2060-01	2,4-D	0.0027	I	ug/L	P337734	
		Diuron	8.0E-04	U	ug/L	P337734	
		Fenuron	0.0080	U	ug/L	P337734	
		Imidacloprid	0.011		ug/L	P337734	
		Bentazon	0.27		ug/L	P337734	
		Linuron	0.0040	U	ug/L	P337734	
		Acetaminophen**	0.0080	U	ug/L	P337734	
		MCP	0.0020	U	ug/L	P337734	
		Carbamazepine**	0.0034		ug/L	P337734	
		Triclopyr**	0.0040	U	ug/L	P337734	
		Primidone**	0.0065	I	ug/L	P337734	
		Fluridone**	0.0060		ug/L	P337734	

Ref. Method and Comment:
 USGS O-2060-01: Results confirmed in re-extraction.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P337738

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P337734

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
 Batch ID: P337734

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: P337738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	80.1		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P337734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	87.8		P	40 - 150
Acetaminophen	105		P	30 - 150
Bentazon	79.1		P	30 - 150
Carbamazepine	78.0		P	40 - 150
Diuron	66.9		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	65.5		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	47.4		P	40 - 150
MCP	92.2		P	40 - 150
Primidone	101		P	40 - 150
Triclopyr	87.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P337738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956504	Sucralose	62.8	75.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P337734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956535	2,4-D	74.2	72.3	P/P	40 - 150
1956535	Acetaminophen	137	135	P/P	30 - 150
1956535	Bentazon	49.9	44.1	P/P	30 - 150
1956535	Carbamazepine	102	107	P/P	40 - 150
1956535	Diuron	76.2	87.2	P/P	40 - 150
1956535	Fenuron	108	105	P/P	40 - 150
1956535	Fluridone	76.1	89.4	P/P	40 - 150
1956535	Imidacloprid	150	151	P/P	40 - 160
1956535	Linuron	68.5	75.5	P/P	40 - 150
1956535	MCP	72.3	66.4	P/P	40 - 150
1956535	Primidone	114	110	P/P	40 - 150
1956535	Triclopyr	65.7	62.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P337738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956504	Sucralose	17.9	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P337734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956535	2,4-D	1.33	Spike	P	0 - 30
1956535	Acetaminophen	1.51	Spike	P	0 - 30
1956535	Bentazon	5.44	Spike	P	0 - 30
1956535	Carbamazepine	4.55	Spike	P	0 - 30
1956535	Diuron	12.9	Spike	P	0 - 30
1956535	Fenuron	3.19	Spike	P	0 - 30
1956535	Fluridone	12.5	Spike	P	0 - 30
1956535	Imidacloprid	1.05	Spike	P	0 - 30
1956535	Linuron	9.61	Spike	P	0 - 30
1956535	MCP	8.42	Spike	P	0 - 30
1956535	Primidone	3.46	Spike	P	0 - 30
1956535	Triclopyr	4.39	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: 1956535
Field Sample ID: G2CE0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1956535
 Field Sample ID: G2CE0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	133	P	30 - 160
EPA 8321B	Carbamazepine-d10	109	P	30 - 160
EPA 8321B	Diuron-d6	91.4	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	71.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	75.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	133	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	109	P	30 - 160
USGS O-2060-01	Diuron-d6	91.4	P	30 - 160
USGS O-2060-01	Primidone-d5	125	P	30 - 160
USGS O-2060-01	Sucralose-d6	71.3	P	40 - 160

Lab Sample ID: 1956536
 Field Sample ID: G2CE0119

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	145	P	30 - 160
EPA 8321B	Carbamazepine-d10	121	P	30 - 160
EPA 8321B	Diuron-d6	102	P	30 - 160
EPA 8321B	Primidone-d5	129	P	30 - 160
EPA 8321B	Sucralose-d6	79.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	116	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	145	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	121	P	30 - 160
USGS O-2060-01	Diuron-d6	102	P	30 - 160
USGS O-2060-01	Primidone-d5	129	P	30 - 160
USGS O-2060-01	Sucralose-d6	79.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A81296
 Included Lab Sample IDs: 1956535, 1956536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	78.2	76.7	P/P	60 - 150

Reference Method: USGS O-2060-01
 Run ID: A81307
 Included Lab Sample IDs: 1956535, 1956536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.2	93.2	P/P	50 - 150
Acetaminophen	110	106	P/P	60 - 150
Bentazon	76.7	79.4	P/P	50 - 150
Bentazon	86.3	80.9	P/P	50 - 150
Carbamazepine	101	102	P/P	60 - 150
Diuron	98.7	104	P/P	60 - 150
Fenuron	106	108	P/P	60 - 150
Fluridone	112	115	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A81307

Included Lab Sample IDs: 1956535, 1956536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	106	101	P/P	60 - 150
Linuron	107	107	P/P	60 - 150
MCP	94.4	91.9	P/P	50 - 150
Primidone	84.6	95.2	P/P	60 - 150
Triclopyr	93.7	90.7	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	80.1	62.8 75.5			17.9
USGS O-2060-01	2,4-D	87.8	74.2 72.3			1.33
	Acetaminophen	105	135 137			1.51
	Bentazon	79.1	49.9 44.1			5.44
	Carbamazepine	78.0	107 102			4.55
	Diuron	66.9	87.2 76.2			12.9
	Fenuron	109	105 108			3.19
	Fluridone	65.5	89.4 76.1			12.5
	Imidacloprid	102	151 150			1.05
	Linuron	47.4	75.5 68.5			9.61
	MCP	92.2	72.3 66.4			8.42
	Primidone	101	110 114			3.46
	Triclopyr	87.6	65.7 62.8			4.39

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1956535, 1956536
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1956535, 1956536
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1956535, 1956536

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/29/2017	01/04/2018	Mohammad Ghaffari	01/04/2018	Mohammad Ghaffari	1956535, 1956536
USGS O-2060-01	12/29/2017	01/04/2018	Julie Michelle Frank	01/04/2018	Julie Michelle Frank	1956535, 1956536
	12/29/2017	01/04/2018	Julie Michelle Frank	01/05/2018	Julie Michelle Frank	1956535, 1956536