

Chemical Analysis Report

CEN-DIST-2017-11-17-02

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

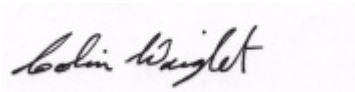
Event Description: **Eau Gallie / Crane Crk**
Request ID: **RQ-2017-11-13-58**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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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: 06-DEC-2017 15:10

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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: Eau Gallie River @ Ballard Park Boat Ramp

Collection Date/Time: 11/16/2017 10:25

Field ID: G5CE0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947564	EPA 8321B	Sucralose**	0.44		ug/L	P336107	
	USGS O-2060-01	2,4-D	0.11	Q	ug/L	P336263	
		Diuron	0.0015	I	ug/L	P335693	
		Fenuron	0.0080	U	ug/L	P335693	
		Imidacloprid	0.014		ug/L	P335693	MS
		Bentazon	0.016	Q	ug/L	P336263	
		Linuron	0.0040	U	ug/L	P335693	
		Acetaminophen**	0.0080	U	ug/L	P335693	
		MCP	0.0021	IQ	ug/L	P336263	
		Carbamazepine**	9.0E-04	I	ug/L	P335693	
		Triclopyr**	0.0040	UQ	ug/L	P336263	
		Primidone**	0.0040	U	ug/L	P335693	
		Fluridone**	0.0051		ug/L	P335693	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Sample Location: Crane Creek @ 65m Upstream of US-1 Bridge

Collection Date/Time: 11/16/2017 11:05

Field ID: G5CE0089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947565	EPA 8321B	Sucralose**	0.42		ug/L	P336107	
	USGS O-2060-01	2,4-D	0.029	Q	ug/L	P336263	
		Diuron	0.0031	I	ug/L	P335693	
		Fenuron	0.0080	U	ug/L	P335693	
		Imidacloprid	0.012		ug/L	P335693	MS
		Bentazon	0.027	Q	ug/L	P336263	
		Linuron	0.0040	U	ug/L	P335693	
		Acetaminophen**	0.0080	U	ug/L	P335693	
		MCP	0.0020	UQ	ug/L	P336263	
		Carbamazepine**	0.0016		ug/L	P335693	
		Triclopyr**	0.0040	UQ	ug/L	P336263	
		Primidone**	0.0040	U	ug/L	P335693	
		Fluridone**	0.015		ug/L	P335693	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P336107

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
 Batch ID: P335693

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P336263

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P336107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	67.4		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	105		P	30 - 150
Carbamazepine	100		P	40 - 150
Diuron	114		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	90.7		P	40 - 160
Linuron	102		P	40 - 150
Primidone	88.9		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P336263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Bentazon	83.2		P	30 - 150
MCP	111		P	40 - 150
Triclopyr	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P336107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949632	Sucralose	76.2	82.2	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947629	Acetaminophen	99.0	107	P/P	30 - 150
1947629	Carbamazepine	71.7	72.7	P/P	40 - 150
1947629	Diuron	75.2	76.1	P/P	40 - 150
1947629	Fenuron	72.1	69.1	P/P	40 - 150
1947629	Fluridone	87.6	89.9	P/P	40 - 150
1947629	Imidacloprid	178	182	F/F	40 - 160
1947629	Linuron	89.7	89.4	P/P	40 - 150
1947629	Primidone	80.4	82.4	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P336263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947129	2,4-D	75.9	83.8	P/P	40 - 150
1947129	Bentazon	49.7	57.0	P/P	30 - 150
1947129	MCP	64.8	68.5	P/P	40 - 150
1947129	Triclopyr	54.0	68.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P336107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949632	Sucralose	2.51	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P335693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947629	Acetaminophen	7.80	Spike	P	0 - 30
1947629	Carbamazepine	1.45	Spike	P	0 - 30
1947629	Diuron	1.20	Spike	P	0 - 30
1947629	Fenuron	4.24	Spike	P	0 - 30
1947629	Fluridone	2.62	Spike	P	0 - 30
1947629	Imidacloprid	1.82	Spike	P	0 - 30
1947629	Linuron	0.279	Spike	P	0 - 30
1947629	Primidone	2.47	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P336263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947129	2,4-D	9.89	Spike	P	0 - 30
1947129	Bentazon	13.7	Spike	P	0 - 30
1947129	MCP	5.52	Spike	P	0 - 30
1947129	Triclopyr	24.0	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: 1947564
 Field Sample ID: G5CE0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	96.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.3	P	30 - 160
EPA 8321B	Diuron-d6	65.2	P	30 - 160
EPA 8321B	Primidone-d5	90.6	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	40 - 160
USGS O-2060-01	2,4-D-d3	70.0	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	96.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	79.3	P	30 - 160
USGS O-2060-01	Diuron-d6	65.2	P	30 - 160
USGS O-2060-01	Primidone-d5	90.6	P	30 - 160
USGS O-2060-01	Sucralose-d6	118	P	40 - 160

Lab Sample ID: 1947565
 Field Sample ID: G5CE0089

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	97.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.6	P	30 - 160
EPA 8321B	Diuron-d6	57.2	P	30 - 160
EPA 8321B	Primidone-d5	77.0	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	40 - 160
USGS O-2060-01	2,4-D-d3	63.4	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	97.8	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	75.6	P	30 - 160
USGS O-2060-01	Diuron-d6	57.2	P	30 - 160
USGS O-2060-01	Primidone-d5	77.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	111	P	40 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80505

Included Lab Sample IDs: 1947564, 1947565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	111	111	P/P	60 - 150
Carbamazepine	105	108	P/P	60 - 150
Diuron	113	114	P/P	60 - 150
Fenuron	107	106	P/P	60 - 150
Fluridone	112	114	P/P	60 - 160
Imidacloprid	97.2	96.5	P/P	60 - 150
Linuron	109	105	P/P	60 - 150
Primidone	102	96.8	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A80568

Included Lab Sample IDs: 1947564, 1947565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	107	72.7	P/P	60 - 150
Sucralose	109	107	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A80693

Included Lab Sample IDs: 1947564, 1947565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.6	94.2	P/P	50 - 150
Bentazon	102	104	P/P	50 - 150
MCP	95.4	100	P/P	50 - 150
Triclopyr	93.3	93.0	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	67.4	76.2	82.2		2.51
USGS O-2060-01	2,4-D	113	75.9	83.8		9.89
	Acetaminophen	105	99.0	107		7.80
	Bentazon	83.2	49.7	57.0		13.7
	Carbamazepine	100	71.7	72.7		1.45
	Diuron	114	75.2	76.1		1.20
	Fenuron	103	72.1	69.1		4.24
	Fluridone	101	87.6	89.9		2.62
	Imidacloprid	90.7	178	182		1.82
	Linuron	102	89.7	89.4		0.279
	MCP	111	64.8	68.5		5.52
	Primidone	88.9	80.4	82.4		2.47
	Triclopyr	107	54.0	68.8		24.0

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1947564, 1947565
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1947564, 1947565
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1947564, 1947565

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/17/2017	11/30/2017	Juyoung Kim	11/30/2017	Juyoung Kim	1947564, 1947565
USGS O-2060-01	11/17/2017	11/22/2017	Hoor Shaik	11/23/2017	Julie Michelle Frank	1947564, 1947565
	11/17/2017	12/04/2017	Hoor Shaik	12/04/2017	Julie Michelle Frank	1947564, 1947565