

Chemical Analysis Report

WQAP-2017-09-15-01

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

Event Description: **Simms Branch**
Request ID: **RQ-2017-09-11-23**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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Certified by: Colin Wright, Program Administrator

Date Certified: 04-OCT-2017 12:27

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: Sims Branch

Collection Date/Time: 09/14/2017 10:13

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1929075	EPA 8321B	Sucralose**	8.7		ug/L	P331679	
	USGS O-2060-01	2,4-D	0.016		ug/L	P331678	
		Diuron	0.019		ug/L	P331678	
		Fenuron	0.0080	U	ug/L	P331678	
		Imidacloprid	0.075		ug/L	P331678	
		Bentazon	0.011		ug/L	P331678	MS
		Linuron	0.0040	U	ug/L	P331678	
		Acetaminophen**	0.011	I	ug/L	P331678	
		MCP	0.0020	U	ug/L	P331678	
		Carbamazepine**	0.054		ug/L	P331678	
		Triclopyr**	0.0040	U	ug/L	P331678	
		Primidone**	0.11		ug/L	P331678	
		Fluridone**	0.0062		ug/L	P331678	RPD

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample. Results confirmed.

Sample Location: Sims Branch DUPLICATE

Collection Date/Time: 09/14/2017 10:15

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1929076	EPA 8321B	Sucralose**	10.4		ug/L	P331679	
	USGS O-2060-01	2,4-D	0.016		ug/L	P331678	
		Diuron	0.019		ug/L	P331678	
		Fenuron	0.0080	U	ug/L	P331678	
		Imidacloprid	0.073		ug/L	P331678	
		Bentazon	0.0099		ug/L	P331678	MS
		Linuron	0.0040	U	ug/L	P331678	
		Acetaminophen**	0.012	I	ug/L	P331678	
		MCP	0.0020	U	ug/L	P331678	
		Carbamazepine**	0.050		ug/L	P331678	
		Triclopyr**	0.0040	U	ug/L	P331678	
		Primidone**	0.10		ug/L	P331678	
		Fluridone**	0.0043		ug/L	P331678	RPD

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample. Results confirmed.

Sample Location: BLANK

Collection Date/Time: 09/14/2017 10:18

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1929077	EPA 8321B	Sucralose**	0.010	U	ug/L	P331679	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P331678	
		Diuron	8.0E-04	U	ug/L	P331678	
		Fenuron	0.0080	U	ug/L	P331678	

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1929077	USGS O-2060-01	Imidacloprid	8.0E-04	U	ug/L	P331678	
		Bentazon	8.0E-04	U	ug/L	P331678	MS
		Linuron	0.0040	U	ug/L	P331678	
		Acetaminophen**	0.0080	U	ug/L	P331678	
		MCP	0.0020	U	ug/L	P331678	
		Carbamazepine**	4.0E-04	U	ug/L	P331678	
		Triclopyr**	0.0040	U	ug/L	P331678	
		Primidone**	0.0040	U	ug/L	P331678	
		Fluridone**	4.0E-04	U	ug/L	P331678	RPD

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P331679

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P331678

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: P331679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	101		P	40 - 150

Reference Method: USGS O-2060-01

Batch ID: P331678

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	57.1		P	40 - 150
Acetaminophen	127		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P331678

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	40.3		P	40 - 150
Carbamazepine	130		P	40 - 150
Diuron	111		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	106		P	40 - 150
Imidacloprid	97.2		P	40 - 160
Linuron	100		P	40 - 150
MCP	59.4		P	40 - 150
Primidone	115		P	40 - 150
Triclopyr	58.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P331679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1929018	Sucralose	66.4	66.7	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P331678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1929018	2,4-D	50.9	49.1	P/P	40 - 150
1929018	Acetaminophen	80.8	84.6	P/P	30 - 150
1929018	Bentazon	20.5	22.0	F/F	40 - 150
1929018	Carbamazepine	128	131	P/P	40 - 150
1929018	Diuron	99.5	99.0	P/P	40 - 150
1929018	Fenuron	109	105	P/P	40 - 150
1929018	Fluridone	78.9	111	P/P	40 - 150
1929018	Linuron	94.5	94.8	P/P	40 - 150
1929018	MCP	50.2	50.3	P/P	40 - 150
1929018	Primidone	93.5	97.6	P/P	40 - 150
1929018	Triclopyr	43.4	48.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P331679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1929018	Sucralose	0.192	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P331678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P331678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1929018	2,4-D	3.68	Spike	P	0 - 30
1929018	Acetaminophen	4.69	Spike	P	0 - 30
1929018	Bentazon	4.91	Spike	P	0 - 30
1929018	Carbamazepine	2.58	Spike	P	0 - 30
1929018	Diuron	0.301	Spike	P	0 - 30
1929018	Fenuron	3.35	Spike	P	0 - 30
1929018	Fluridone	34.1	Spike	F	0 - 30
1929018	Imidacloprid	2.73	Spike	P	0 - 30
1929018	Linuron	0.380	Spike	P	0 - 30
1929018	MCP	0.278	Spike	P	0 - 30
1929018	Primidone	4.21	Spike	P	0 - 30
1929018	Triclopyr	11.3	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: 1929075
Field Sample ID: G1SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	97.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	85.2	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	40 - 160
USGS O-2060-01	2,4-D-d3	73.9	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	97.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	85.2	P	30 - 160
USGS O-2060-01	Primidone-d5	118	P	30 - 160
USGS O-2060-01	Sucralose-d6	111	P	40 - 160

Lab Sample ID: 1929076
Field Sample ID: G1SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	95.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	84.5	P	30 - 160
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	144	P	40 - 160
USGS O-2060-01	2,4-D-d3	73.7	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	95.3	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	84.5	P	30 - 160
USGS O-2060-01	Primidone-d5	120	P	30 - 160
USGS O-2060-01	Sucralose-d6	144	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1929077
 Field Sample ID: BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Carbamazepine-d10	121	P	30 - 160
EPA 8321B	Diuron-d6	101	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	136	P	40 - 160
USGS O-2060-01	2,4-D-d3	51.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	134	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	121	P	30 - 160
USGS O-2060-01	Diuron-d6	101	P	30 - 160
USGS O-2060-01	Primidone-d5	113	P	30 - 160
USGS O-2060-01	Sucralose-d6	136	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A79060
 Included Lab Sample IDs: 1929077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	96.7	P/P	50 - 150
Acetaminophen	107	106	P/P	60 - 150
Bentazon	101	101	P/P	50 - 150
Carbamazepine	125	123	P/P	60 - 150
Diuron	106	107	P/P	60 - 150
Fenuron	103	103	P/P	60 - 150
Fluridone	112	109	P/P	60 - 160
Imidacloprid	98.3	94.5	P/P	60 - 150
Linuron	104	101	P/P	60 - 150
MCP	94.1	93.8	P/P	50 - 150
Primidone	104	95.0	P/P	60 - 150
Triclopyr	97.7	94.8	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A79086
 Included Lab Sample IDs: 1929075, 1929076, 1929077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	140	135	P/P	60 - 150

Reference Method: USGS O-2060-01
 Run ID: A79179
 Included Lab Sample IDs: 1929075, 1929076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	120	107	P/P	50 - 150
Acetaminophen	101	100	P/P	60 - 150
Bentazon	128	143	P/P	50 - 150
Carbamazepine	112	111	P/P	60 - 150
Diuron	103	103	P/P	60 - 150
Fenuron	103	97.8	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79179

Included Lab Sample IDs: 1929075, 1929076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	116	116	P/P	60 - 160
Imidacloprid	99.9	95.6	P/P	60 - 150
Linuron	107	102	P/P	60 - 150
MCP	97.1	110	P/P	50 - 150
Primidone	103	97.4	P/P	60 - 150
Triclopyr	109	116	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	101	66.4 66.7			0.192
USGS O-2060-01	2,4-D	57.1	50.9 49.1			3.68
	Acetaminophen	127	80.8 84.6			4.69
	Bentazon	40.3	20.5 22.0			4.91
	Carbamazepine	130	128 131			2.58
	Diuron	111	99.5 99.0			0.301
	Fenuron	108	109 105			3.35
	Fluridone	106	78.9 111			34.1
	Imidacloprid	97.2				2.73
	Linuron	100	94.5 94.8			0.380
	MCP	59.4	50.2 50.3			0.278
	Primidone	115	93.5 97.6			4.21
	Triclopyr	58.2	43.4 48.6			11.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1929075, 1929076, 1929077
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1929075, 1929076, 1929077
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1929075, 1929076, 1929077

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/15/2017	09/19/2017	Hoor Shaik	09/21/2017	Juyoung Kim	1929075, 1929076, 1929077
USGS O-2060-01	09/15/2017	09/19/2017	Hoor Shaik	09/21/2017	Julie Michelle Frank	1929077
	09/15/2017	09/19/2017	Hoor Shaik	09/27/2017	Julie Michelle Frank	1929075, 1929076