

Chemical Analysis Report

WQAP-2017-12-07-03

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

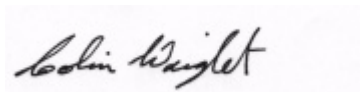
Event Description: **Pinellas LR3**
Request ID: **RQ-2017-12-04-46**
Customer: **WQAP**
Project ID: **SMP**

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: 14-DEC-2017 10:56

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: Bishop Creek PC Site #12-04

Collection Date/Time: 12/06/2017 13:18

Field ID: G1SW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1951704	EPA 8321B	Sucralose**	0.069		ug/L	P336428	
	USGS O-2060-01	2,4-D	0.032		ug/L	P336466	
		Diuron	0.0013	I	ug/L	P336466	
		Fenuron	0.0080	U	ug/L	P336466	
		Imidacloprid	0.041		ug/L	P336466	
		Bentazon	0.041		ug/L	P336466	
		Linuron	0.0040	U	ug/L	P336466	
		Acetaminophen**	0.0080	U	ug/L	P336466	
		MCP	0.0020	U	ug/L	P336466	
		Carbamazepine**	4.0E-04	U	ug/L	P336466	
		Triclopyr**	0.0040	U	ug/L	P336466	
		Primidone**	0.0040	U	ug/L	P336466	
		Fluridone**	0.020		ug/L	P336466	

Sample Location: Alligator Creek PC Site #14-10

Collection Date/Time: 12/06/2017 14:08

Field ID: G1SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1951705	EPA 8321B	Sucralose**	1.7		ug/L	P336428	
	USGS O-2060-01	2,4-D	0.031		ug/L	P336466	
		Diuron	0.0097		ug/L	P336466	
		Fenuron	0.0080	U	ug/L	P336466	
		Imidacloprid	0.041		ug/L	P336466	
		Bentazon	0.026		ug/L	P336466	
		Linuron	0.0040	U	ug/L	P336466	
		Acetaminophen**	0.0080	U	ug/L	P336466	
		MCP	0.0022	I	ug/L	P336466	
		Carbamazepine**	0.0035		ug/L	P336466	
		Triclopyr**	0.0040	U	ug/L	P336466	
		Primidone**	0.0078	I	ug/L	P336466	
		Fluridone**	0.077		ug/L	P336466	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P336428

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P336466

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P336466

Component	Result	Code	Units
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
MCPP	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: P336428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	112		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	99.7		P	40 - 150
Acetaminophen	88.6		P	30 - 150
Bentazon	92.7		P	30 - 150
Carbamazepine	93.9		P	40 - 150
Diuron	81.1		P	40 - 150
Fenuron	95.1		P	40 - 150
Fluridone	93.2		P	40 - 150
Imidacloprid	91.9		P	40 - 160
Linuron	83.6		P	40 - 150
MCPP	91.3		P	40 - 150
Primidone	99.8		P	40 - 150
Triclopyr	91.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P336428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950864	Sucralose	115	115	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1951659	2,4-D	88.4	83.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P336466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1951659	Acetaminophen	104	112	P/P	30 - 150
1951659	Bentazon	76.5	72.8	P/P	30 - 150
1951659	Carbamazepine	107	110	P/P	40 - 150
1951659	Diuron	91.6	92.8	P/P	40 - 150
1951659	Fenuron	105	108	P/P	40 - 150
1951659	Fluridone	103	108	P/P	40 - 150
1951659	Imidacloprid	114	123	P/P	40 - 160
1951659	Linuron	97.3	101	P/P	40 - 150
1951659	MCP	84.2	80.5	P/P	40 - 150
1951659	Primidone	112	115	P/P	40 - 150
1951659	Triclopyr	77.8	75.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P336428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950864	Sucralose	0.0	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P336466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1951659	2,4-D	5.37	Spike	P	0 - 30
1951659	Acetaminophen	7.50	Spike	P	0 - 30
1951659	Bentazon	4.80	Spike	P	0 - 30
1951659	Carbamazepine	2.68	Spike	P	0 - 30
1951659	Diuron	1.30	Spike	P	0 - 30
1951659	Fenuron	3.48	Spike	P	0 - 30
1951659	Fluridone	5.21	Spike	P	0 - 30
1951659	Imidacloprid	6.59	Spike	P	0 - 30
1951659	Linuron	3.27	Spike	P	0 - 30
1951659	MCP	4.48	Spike	P	0 - 30
1951659	Primidone	3.00	Spike	P	0 - 30
1951659	Triclopyr	2.93	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: 1951704
Field Sample ID: G1SW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	112	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1951704
Field Sample ID: G1SW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	91.4	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	74.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	86.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	112	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	103	P	30 - 160
USGS O-2060-01	Diuron-d6	91.4	P	30 - 160
USGS O-2060-01	Primidone-d5	114	P	30 - 160
USGS O-2060-01	Sucralose-d6	74.3	P	40 - 160

Lab Sample ID: 1951705
Field Sample ID: G1SW0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	102	P	30 - 160
EPA 8321B	Diuron-d6	89.5	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	97.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	69.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	117	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	102	P	30 - 160
USGS O-2060-01	Diuron-d6	89.5	P	30 - 160
USGS O-2060-01	Primidone-d5	111	P	30 - 160
USGS O-2060-01	Sucralose-d6	97.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A80771
Included Lab Sample IDs: 1951704, 1951705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.9	98.1	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A80867
Included Lab Sample IDs: 1951704, 1951705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.5	99.5	P/P	50 - 150
Acetaminophen	102	104	P/P	60 - 150
Acetaminophen	104	104	P/P	60 - 150
Bentazon	95.4	95.7	P/P	50 - 150
Carbamazepine	107	109	P/P	60 - 150
Carbamazepine	109	109	P/P	60 - 150
Diuron	103	107	P/P	60 - 150
Diuron	104	103	P/P	60 - 150
Fenuron	102	106	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80867

Included Lab Sample IDs: 1951704, 1951705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	102	102	P/P	60 - 150
Fluridone	112	113	P/P	60 - 160
Fluridone	113	114	P/P	60 - 160
Imidacloprid	94.6	95.9	P/P	60 - 150
Imidacloprid	95.9	104	P/P	60 - 150
Linuron	106	108	P/P	60 - 150
Linuron	108	108	P/P	60 - 150
MCP	98.6	99.6	P/P	50 - 150
Primidone	108	91.1	P/P	60 - 150
Primidone	109	108	P/P	60 - 150
Triclopyr	92.3	98.4	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	112	115 115			0.0
USGS O-2060-01	2,4-D	99.7	88.4 83.8			5.37
	Acetaminophen	88.6	112 104			7.50
	Bentazon	92.7	76.5 72.8			4.80
	Carbamazepine	93.9	110 107			2.68
	Diuron	81.1	92.8 91.6			1.30
	Fenuron	95.1	108 105			3.48
	Fluridone	93.2	108 103			5.21
	Imidacloprid	91.9	123 114			6.59
	Linuron	83.6	101 97.3			3.27
	MCP	91.3	84.2 80.5			4.48
	Primidone	99.8	115 112			3.00
	Triclopyr	91.0	77.8 75.5			2.93

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1951704, 1951705
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1951704, 1951705
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1951704, 1951705

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/07/2017	12/07/2017	Juyoung Kim	12/07/2017	Juyoung Kim	1951704, 1951705
USGS O-2060-01	12/07/2017	12/11/2017	Hoor Shaik	12/12/2017	Julie Michelle Frank	1951704, 1951705
	12/07/2017	12/11/2017	Hoor Shaik	12/13/2017	Julie Michelle Frank	1951704, 1951705