

Chemical Analysis Report

WQAP-2017-12-12-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

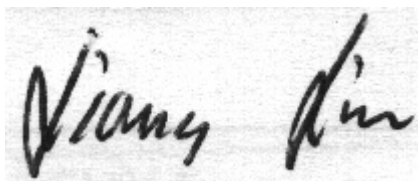
Event Description: **Pinellas LR2**
Request ID: **RQ-2017-12-11-20**
Customer: **WQAP**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-DEC-2017 15:25

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: CURLEW CREEK PC SITE #10-02

Collection Date/Time: 12/11/2017 15:21

Field ID: G5SW0132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953039	EPA 8321B	Sucralose**	12		ug/L	P336557	
	USGS O-2060-01	2,4-D	0.0094		ug/L	P336965	
		Diuron	0.016		ug/L	P336965	
		Fenuron	0.0080	U	ug/L	P336965	
		Imidacloprid	0.087		ug/L	P336965	MS
		Bentazon	0.049		ug/L	P336965	
		Linuron	0.0040	U	ug/L	P336965	
		Acetaminophen**	0.0080	U	ug/L	P336965	
		MCP	0.0020	U	ug/L	P336965	
		Carbamazepine**	0.081		ug/L	P336965	
		Triclopyr**	0.0040	U	ug/L	P336965	
		Primidone**	0.14		ug/L	P336965	
		Fluridone**	0.022		ug/L	P336965	

Sample Location: BEE BRANCH PC SITE #08-03

Collection Date/Time: 12/11/2017 13:03

Field ID: G5SW0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953040	EPA 8321B	Sucralose**	4.0		ug/L	P336557	
	USGS O-2060-01	2,4-D	0.0049	I	ug/L	P336965	
		Diuron	0.0054		ug/L	P336965	
		Fenuron	0.0080	U	ug/L	P336965	
		Imidacloprid	0.033		ug/L	P336965	MS
		Bentazon	0.60		ug/L	P336965	
		Linuron	0.0040	U	ug/L	P336965	
		Acetaminophen**	0.0080	U	ug/L	P336965	
		MCP	0.0053	I	ug/L	P336965	
		Carbamazepine**	0.015		ug/L	P336965	
		Triclopyr**	0.0040	U	ug/L	P336965	
		Primidone**	0.038		ug/L	P336965	
		Fluridone**	0.49		ug/L	P336965	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P336557

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P336965

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: P336965

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: P336557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	129		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.0		P	40 - 150
Acetaminophen	95.8		P	30 - 150
Bentazon	98.2		P	30 - 150
Carbamazepine	106		P	40 - 150
Diuron	88.5		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	105		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	93.5		P	40 - 150
MCPP	91.5		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	91.9		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P336557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1951718	Sucralose	97.3	100	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1952991	Acetaminophen	125	134	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P336965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1952991	Carbamazepine	97.3	105	P/P	40 - 150
1952991	Diuron	85.6	89.9	P/P	40 - 150
1952991	Fenuron	79.6	88.1	P/P	40 - 150
1952991	Fluridone	89.3	97.1	P/P	40 - 150
1952991	Imidacloprid	192	198	F/F	40 - 160
1952991	Linuron	98.4	111	P/P	40 - 150
1952991	Primidone	92.0	110	P/P	40 - 150
1953148	2,4-D	91.5	98.8	P/P	40 - 150
1953148	Bentazon	47.1	49.6	P/P	30 - 150
1953148	MCP	75.6	80.1	P/P	40 - 150
1953148	Triclopyr	75.0	83.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P336557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1951718	Sucralose	3.09	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P336965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1952991	Acetaminophen	7.40	Spike	P	0 - 30
1952991	Carbamazepine	7.18	Spike	P	0 - 30
1952991	Diuron	4.92	Spike	P	0 - 30
1952991	Fenuron	10.1	Spike	P	0 - 30
1952991	Fluridone	8.38	Spike	P	0 - 30
1952991	Imidacloprid	3.20	Spike	P	0 - 30
1952991	Linuron	11.8	Spike	P	0 - 30
1952991	Primidone	18.0	Spike	P	0 - 30
1953148	2,4-D	7.64	Spike	P	0 - 30
1953148	Bentazon	5.11	Spike	P	0 - 30
1953148	MCP	5.80	Spike	P	0 - 30
1953148	Triclopyr	10.9	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: 1953039
Field Sample ID: G5SW0132

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	109	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1953039
Field Sample ID: G5SW0132

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	88.9	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	64.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	95.9	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	109	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	100	P	30 - 160
USGS O-2060-01	Diuron-d6	88.9	P	30 - 160
USGS O-2060-01	Primidone-d5	112	P	30 - 160
USGS O-2060-01	Sucralose-d6	64.9	P	40 - 160

Lab Sample ID: 1953040
Field Sample ID: G5SW0133

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	116	P	30 - 160
EPA 8321B	Carbamazepine-d10	115	P	30 - 160
EPA 8321B	Diuron-d6	91.4	P	30 - 160
EPA 8321B	Primidone-d5	130	P	30 - 160
EPA 8321B	Sucralose-d6	58.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	75.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	116	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	115	P	30 - 160
USGS O-2060-01	Diuron-d6	91.4	P	30 - 160
USGS O-2060-01	Primidone-d5	130	P	30 - 160
USGS O-2060-01	Sucralose-d6	58.2	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A80990
Included Lab Sample IDs: 1953040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	112	104	P/P	50 - 150
Fluridone	97.7	105	P/P	60 - 160

Reference Method: USGS O-2060-01
Run ID: A80991
Included Lab Sample IDs: 1953039, 1953040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	108	P/P	50 - 150
Acetaminophen	104	105	P/P	60 - 150
Acetaminophen	105	103	P/P	60 - 150
Bentazon	112	115	P/P	50 - 150
Carbamazepine	106	110	P/P	60 - 150
Carbamazepine	110	113	P/P	60 - 150
Diuron	102	100	P/P	60 - 150
Diuron	99.8	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80991

Included Lab Sample IDs: 1953039, 1953040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	103	107	P/P	60 - 150
Fenuron	107	107	P/P	60 - 150
Fluridone	107	112	P/P	60 - 160
Imidacloprid	100	102	P/P	60 - 150
Imidacloprid	102	105	P/P	60 - 150
Linuron	107	110	P/P	60 - 150
Linuron	110	116	P/P	60 - 150
MCP	106	102	P/P	50 - 150
Primidone	110	99.5	P/P	60 - 150
Primidone	99.5	106	P/P	60 - 150
Triclopyr	108	100	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A81055

Included Lab Sample IDs: 1953039, 1953040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	89.0	P/P	60 - 150
Sucralose	86.6	105	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 SMP	MS
EPA 8321B	Sucralose	129	97.3	100		3.09
USGS O-2060-01	2,4-D	95.0	91.5	98.8		7.64
	Acetaminophen	95.8	125	134		7.40
	Bentazon	98.2	47.1	49.6		5.11
	Carbamazepine	106	97.3	105		7.18
	Diuron	88.5	85.6	89.9		4.92
	Fenuron	106	79.6	88.1		10.1
	Fluridone	105	89.3	97.1		8.38
	Imidacloprid	102	192	198		3.20
	Linuron	93.5	98.4	111		11.8
	MCP	91.5	75.6	80.1		5.80
	Primidone	107	92.0	110		18.0
	Triclopyr	91.9	75.0	83.6		10.9

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1953039, 1953040
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1953039, 1953040
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1953039, 1953040

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/12/2017	12/20/2017	Juyoung Kim	12/20/2017	Juyoung Kim	1953039, 1953040
USGS O-2060-01	12/12/2017	12/15/2017	Hoor Shaik	12/16/2017	Julie Michelle Frank	1953039, 1953040
	12/12/2017	12/15/2017	Hoor Shaik	12/17/2017	Julie Michelle Frank	1953039, 1953040
	12/12/2017	12/15/2017	Hoor Shaik	12/19/2017	Julie Michelle Frank	1953040