

Chemical Analysis Report

WQAP-2017-10-13-02

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

Event Description: **SMP: Upper Lemon Bay**

Request ID: **RQ-2017-09-25-16**

Customer: **WQAP**

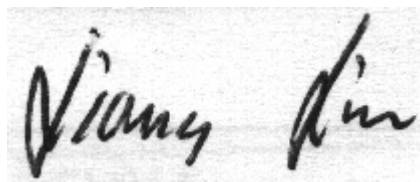
Project ID: **SMP**

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For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-NOV-2017 14:09

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Lemon Bay near Indian Mound Park

Collection Date/Time: 10/12/2017 10:30

Field ID: G3SD101217-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936840	EPA 8321B	Sucralose**	0.081		ug/L	P333619	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P333253	
		Diuron	0.0024	I	ug/L	P333253	
		Fenuron	0.0080	U	ug/L	P333253	
		Imidacloprid	0.0040		ug/L	P333253	
		Bentazon	0.0019	I	ug/L	P333253	
		Linuron	0.0040	U	ug/L	P333253	
		Acetaminophen**	0.0080	U	ug/L	P333253	
		MCP	0.0020	U	ug/L	P333253	
		Carbamazepine**	7.6E-04	I	ug/L	P333253	
		Triclopyr**	0.0040	U	ug/L	P333253	
		Primidone**	0.0040	UJ	ug/L	P333253	SUR
		Fluridone**	0.0021		ug/L	P333253	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for 2,4-D and bentazon could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes. MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample. Primidone-d5 surrogate spike recovery exceeding the control limits.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P333619

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P333253

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: P333619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P333619

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

Reference Method: USGS O-2060-01
 Batch ID: P333253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.8		P	40 - 150
Acetaminophen	125		P	30 - 150
Bentazon	80.3		P	30 - 150
Carbamazepine	126		P	40 - 150
Diuron	114		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	119		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	120		P	40 - 150
MCP	82.8		P	40 - 150
Primidone	108		P	40 - 150
Triclopyr	77.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P333619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937475	Sucralose	97.9	106	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P333253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936357	Acetaminophen	113	105	P/P	30 - 150
1936357	Carbamazepine	124	128	P/P	40 - 150
1936357	Diuron	84.3	83.1	P/P	40 - 150
1936357	Fenuron	102	102	P/P	40 - 150
1936357	Linuron	109	108	P/P	40 - 150
1936357	MCP	58.2	57.7	P/P	40 - 150
1936357	Primidone	109	109	P/P	40 - 150
1936357	Triclopyr	67.1	60.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P333619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937475	Sucralose	8.23	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P333253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936357	2,4-D	1.19	Spike	P	0 - 30
1936357	Acetaminophen	6.83	Spike	P	0 - 30
1936357	Bentazon	1.22	Spike	P	0 - 30
1936357	Carbamazepine	3.34	Spike	P	0 - 30
1936357	Diuron	1.18	Spike	P	0 - 30
1936357	Fenuron	0.0976	Spike	P	0 - 30
1936357	Fluridone	26.5	Spike	P	0 - 30
1936357	Imidacloprid	3.73	Spike	P	0 - 30
1936357	Linuron	0.0737	Spike	P	0 - 30
1936357	MCP	0.794	Spike	P	0 - 30
1936357	Primidone	0.370	Spike	P	0 - 30
1936357	Triclopyr	9.94	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: 1936840
Field Sample ID: G3SD101217-1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	90.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	155	P	30 - 160
EPA 8321B	Diuron-d6	108	P	30 - 160
EPA 8321B	Primidone-d5	167	F	30 - 160
EPA 8321B	Sucralose-d6	45.7	P	40 - 160
USGS O-2060-01	2,4-D-d3	73.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	90.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	155	P	30 - 160
USGS O-2060-01	Diuron-d6	108	P	30 - 160
USGS O-2060-01	Primidone-d5	167	F	30 - 160
USGS O-2060-01	Sucralose-d6	45.7	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A79661
Included Lab Sample IDs: 1936840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	95.1	P/P	50 - 150
Acetaminophen	112	106	P/P	60 - 150
Bentazon	127	122	P/P	50 - 150
Carbamazepine	115	116	P/P	60 - 150
Diuron	105	108	P/P	60 - 150
Fenuron	109	105	P/P	60 - 150
Fluridone	116	116	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79661

Included Lab Sample IDs: 1936840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	101	106	P/P	60 - 150
Linuron	117	120	P/P	60 - 150
MCP	99.6	98.4	P/P	50 - 150
Primidone	108	104	P/P	60 - 150
Triclopyr	104	110	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A79920

Included Lab Sample IDs: 1936840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	102	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	101	97.9 106			8.23
USGS O-2060-01	2,4-D	88.8				1.19
	Acetaminophen	125	113 105			6.83
	Bentazon	80.3				1.22
	Carbamazepine	126	124 128			3.34
	Diuron	114	84.3 83.1			1.18
	Fenuron	116	102 102			0.0976
	Fluridone	119				26.5
	Imidacloprid	102				3.73
	Linuron	120	109 108			0.0737
	MCP	82.8	58.2 57.7			0.794
	Primidone	108	109 109			0.370
	Triclopyr	77.2	67.1 60.8			9.94

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1936840
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1936840
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1936840

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/13/2017	10/24/2017	Juyoung Kim	10/27/2017	Juyoung Kim	1936840
USGS O-2060-01	10/13/2017	10/16/2017	Hoor Shaik	10/20/2017	Julie Michelle Frank	1936840