

Chemical Analysis Report

SO-DIST-2018-05-03-01

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

Event Description: **D.T. Sara**
Request ID: **RQ-2018-05-07-45**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-MAY-2018 13:41

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: Walker Creek @ 32nd St

Collection Date/Time: 05/02/2018 10:35

Field ID: G3SD0094

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989865	EPA 8321B	2,4-D	0.0020	U	ug/L	P344559	
		Bentazon	0.016		ug/L	P344559	
		MCP	0.0040	I	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0076	I	ug/L	P344559	
		Diuron	0.0063	I	ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0046	I	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.36		ug/L	P344559	
		Carbamazepine**	0.0019		ug/L	P344559	
		Fluridone**	0.029		ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.37	I	ug/L	P344561	

Sample Location: Whitaker @ Museum Pier

Collection Date/Time: 05/02/2018 10:15

Field ID: G3SD0105

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989867	EPA 8321B	2,4-D	0.0020	U	ug/L	P344559	
		Bentazon	0.0014	I	ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0020	U	ug/L	P344559	
		Diuron	0.011		ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.016	I	ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	0.0025		ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.10	U	ug/L	P344561	

Sample Location: DrainToHudson @ShadeAve

Collection Date/Time: 05/02/2018 09:45

Field ID: G3SD0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989866	EPA 8321B	2,4-D	0.0020	U	ug/L	P344559	
		Bentazon	8.0E-04	U	ug/L	P344559	

Field ID: G3SD0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989866	EPA 8321B	MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.021		ug/L	P344559	
		Diuron	0.0020	U	ug/L	P344559	
		Pyraclorobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.21		ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	4.0E-04	U	ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.29	I	ug/L	P344561	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P344559

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	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclorobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P344561

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P344559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P344559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	91.8		P	30 - 150
Bentazon	88.9		P	30 - 150
Carbamazepine	67.1		P	40 - 150
Diuron	71.2		P	40 - 150
Fenuron	99.9		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Imazapyr	86.2		P	40 - 150
Imidacloprid	103		P	40 - 160
Linuron	84.1		P	40 - 150
MCP	85.0		P	40 - 150
Primidone	83.3		P	40 - 150
Pyraclostrobin	71.1		P	40 - 150
Triclopyr	81.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P344559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989874	2,4-D	116	108	P/P	40 - 150
1989874	Acetaminophen	75.4	75.4	P/P	30 - 150
1989874	Bentazon	58.2	53.7	P/P	30 - 150
1989874	Carbamazepine	49.8	48.5	P/P	40 - 150
1989874	Diuron	52.3	53.8	P/P	40 - 150
1989874	Fenuron	51.7	55.9	P/P	40 - 150
1989874	Fluridone	80.2	87.3	P/P	40 - 150
1989874	Hydrocodone	83.4	85.4	P/P	40 - 150
1989874	Imazapyr	77.4	78.7	P/P	40 - 150
1989874	Imidacloprid	136	137	P/P	40 - 160
1989874	Linuron	81.5	84.7	P/P	40 - 150
1989874	MCP	113	106	P/P	40 - 150
1989874	Primidone	72.9	76.1	P/P	40 - 150
1989874	Pyraclostrobin	73.8	73.8	P/P	40 - 150
1989874	Triclopyr	103	95.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989731	Sucralose	114	99.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P344559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989874	2,4-D	5.80	Spike	P	0 - 30
1989874	Acetaminophen	0.0207	Spike	P	0 - 30
1989874	Bentazon	6.68	Spike	P	0 - 30
1989874	Carbamazepine	2.64	Spike	P	0 - 30
1989874	Diuron	1.87	Spike	P	0 - 30
1989874	Fenuron	6.10	Spike	P	0 - 30
1989874	Fluridone	7.88	Spike	P	0 - 30
1989874	Hydrocodone	2.33	Spike	P	0 - 30
1989874	Imazapyr	0.936	Spike	P	0 - 30
1989874	Imidacloprid	0.949	Spike	P	0 - 30
1989874	Linuron	3.88	Spike	P	0 - 30
1989874	MCP	6.70	Spike	P	0 - 30
1989874	Primidone	4.31	Spike	P	0 - 30
1989874	Pyraclostrobin	0.0324	Spike	P	0 - 30
1989874	Triclopyr	7.71	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989731	Sucralose	12.9	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: 1989865
Field Sample ID: G3SD0094

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.4	P	30 - 160
EPA 8321B	Diuron-d6	60.3	P	30 - 160
EPA 8321B	Primidone-d5	80.2	P	30 - 160
EPA 8321B	Sucralose-d6	93.3	P	40 - 160

Lab Sample ID: 1989866
Field Sample ID: G3SD0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.4	P	30 - 160
EPA 8321B	Diuron-d6	64.4	P	30 - 160
EPA 8321B	Primidone-d5	85.8	P	30 - 160
EPA 8321B	Sucralose-d6	65.3	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1989867
Field Sample ID: G3SD0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.4	P	30 - 160
EPA 8321B	Diuron-d6	83.0	P	30 - 160
EPA 8321B	Primidone-d5	99.1	P	30 - 160
EPA 8321B	Sucralose-d6	56.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A83769
Included Lab Sample IDs: 1989865, 1989866, 1989867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.1	98.9	P/P	50 - 150
Bentazon	111	108	P/P	50 - 160
MCP	107	109	P/P	50 - 150
Triclopyr	98.2	102	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A83883
Included Lab Sample IDs: 1989865, 1989866, 1989867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	134	141	P/P	60 - 150
Carbamazepine	132	123	P/P	60 - 150
Diuron	133	128	P/P	60 - 150
Fenuron	119	109	P/P	60 - 150
Fluridone	138	122	P/P	60 - 160
Hydrocodone	130	124	P/P	60 - 150
Imazapyr	104	105	P/P	50 - 150
Imidacloprid	110	97.4	P/P	60 - 150
Linuron	116	107	P/P	60 - 150
Primidone	99.4	93.6	P/P	60 - 150
Pyraclostrobin	108	103	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A83902
Included Lab Sample IDs: 1989865, 1989866, 1989867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	157	P/P	60 - 160
Sucralose	157	110	P/P	60 - 160

* 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		Precision SMP	MS
			LCS			
EPA 8321B	2,4-D	81.1	116	108		5.80
	Acetaminophen	91.8	75.4	75.4		0.0207
	Bentazon	88.9	58.2	53.7		6.68
	Carbamazepine	67.1	49.8	48.5		2.64
	Diuron	71.2	52.3	53.8		1.87
	Fenuron	99.9	51.7	55.9		6.10
	Fluridone	102	80.2	87.3		7.88
	Hydrocodone	98.2	83.4	85.4		2.33
	Imazapyr	86.2	77.4	78.7		0.936
	Imidacloprid	103	136	137		0.949
	Linuron	84.1	81.5	84.7		3.88
	MCP	85.0	113	106		6.70
	Primidone	83.3	72.9	76.1		4.31
	Pyraclostrobin	71.1	73.8	73.8		0.0324
	Sucralose	96.6	114	99.2		12.9
	Triclopyr	81.9	103	95.1		7.71

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1989865, 1989866, 1989867

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 15:32	Juyoung Kim	1989865
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 15:51	Juyoung Kim	1989866
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 16:28	Juyoung Kim	1989867
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 05:04	Juyoung Kim	1989865
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 05:39	Juyoung Kim	1989866
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 06:14	Juyoung Kim	1989867
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 01:57	Juyoung Kim	1989865
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 02:31	Juyoung Kim	1989866
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 03:06	Juyoung Kim	1989867