

Chemical Analysis Report

SW-DIST-2018-10-30-01

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

Event Description: **MATTRESS DRAIN**
Request ID: **RQ-2018-10-29-78**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 14-NOV-2018 08:23

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: Mattress Drain @ Rockeridge Rd

Collection Date/Time: 10/29/2018 12:45

Field ID: G4SW0092

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037334	EPA 8321B	2,4-D	0.0020	U	ug/L	P353668	
		Bentazon	8.0E-04	U	ug/L	P353668	
		MCP	0.0020	U	ug/L	P353668	
		Triclopyr**	0.0040	U	ug/L	P353668	
		Imidacloprid	0.0020	U	ug/L	P353668	MS
		Diuron	0.0020	U	ug/L	P353668	
		Pyraclostrobin**	0.0020	U	ug/L	P353668	
		Primidone**	0.0040	U	ug/L	P353668	
		Linuron	0.0040	U	ug/L	P353668	
		Acetaminophen**	0.0080	U	ug/L	P353668	
		Fenuron	0.016	U	ug/L	P353668	
		Imazapyr**	0.0040	U	ug/L	P353668	
		Carbamazepine**	8.0E-04	U	ug/L	P353668	
		Fluridone**	4.0E-04	U	ug/L	P353668	
		Hydrocodone**	8.0E-04	U	ug/L	P353668	
		Naproxen**	0.0080	U	ug/L	P353668	
		Ibuprofen**	0.020	U	ug/L	P353668	
		Sucralose**	0.010	U	ug/L	P353941	
		Acesulfame K**	0.10	U	ug/L	P353941	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P353668

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	8.0E-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
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P353941

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P353668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.5		P	40 - 150
Acetaminophen	112		P	30 - 150
Bentazon	88.8		P	30 - 150
Carbamazepine	86.0		P	40 - 150
Diuron	80.3		P	40 - 150
Fenuron	133		P	40 - 150
Fluridone	91.2		P	40 - 150
Hydrocodone	116		P	40 - 150
Ibuprofen	90.8		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	110		P	40 - 160
Linuron	78.8		P	40 - 150
MCPP	110		P	40 - 150
Naproxen	105		P	40 - 150
Primidone	110		P	40 - 150
Pyraclostrobin	67.5		P	40 - 150
Triclopyr	116		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P353941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.4		P	40 - 150
Sucralose	91.9		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P353668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036302	2,4-D	142	130	P/P	40 - 150
2036302	Acetaminophen	115	111	P/P	30 - 150
2036302	Bentazon	55.5	53.2	P/P	30 - 150
2036302	Carbamazepine	79.4	77.7	P/P	40 - 150
2036302	Diuron	59.7	59.0	P/P	40 - 150
2036302	Fenuron	107	115	P/P	40 - 150
2036302	Fluridone	89.0	87.5	P/P	40 - 150
2036302	Hydrocodone	115	108	P/P	40 - 150
2036302	Ibuprofen	72.5	76.5	P/P	40 - 150
2036302	Imazapyr	111	109	P/P	40 - 150
2036302	Imidacloprid	164	161	F/F	40 - 160
2036302	Linuron	65.0	62.2	P/P	40 - 150
2036302	MCPP	142	149	P/P	40 - 150
2036302	Naproxen	94.8	93.5	P/P	40 - 150
2036302	Primidone	98.0	99.6	P/P	40 - 150
2036302	Pyraclostrobin	62.2	63.6	P/P	40 - 150
2036302	Triclopyr	135	134	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037201	Acesulfame K	145	147	P/P	40 - 150
2037201	Sucralose	97.7	104	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P353668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036302	2,4-D	8.59	Spike	P	0 - 30
2036302	Acetaminophen	3.62	Spike	P	0 - 30
2036302	Bentazon	3.74	Spike	P	0 - 30
2036302	Carbamazepine	2.09	Spike	P	0 - 30
2036302	Diuron	0.966	Spike	P	0 - 30
2036302	Fenuron	7.16	Spike	P	0 - 30
2036302	Fluridone	1.37	Spike	P	0 - 30
2036302	Hydrocodone	6.71	Spike	P	0 - 30
2036302	Ibuprofen	5.35	Spike	P	0 - 30
2036302	Imazapyr	1.08	Spike	P	0 - 30
2036302	Imidacloprid	1.94	Spike	P	0 - 30
2036302	Linuron	4.35	Spike	P	0 - 30
2036302	MCP	4.64	Spike	P	0 - 30
2036302	Naproxen	1.40	Spike	P	0 - 30
2036302	Primidone	1.64	Spike	P	0 - 30
2036302	Pyraclostrobin	2.28	Spike	P	0 - 30
2036302	Triclopyr	1.01	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P353941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037201	Acesulfame K	1.03	Spike	P	0 - 30
2037201	Sucralose	5.93	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: 2037334

Field Sample ID: G4SW0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.1	P	30 - 160
EPA 8321B	2,4-D-d3	79.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.5	P	30 - 160
EPA 8321B	Diuron-d6	53.1	P	30 - 160
EPA 8321B	Endothall-d6	153	P	40 - 160
EPA 8321B	Ibuprofen-d3	83.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.0	P	30 - 160
EPA 8321B	Primidone-d5	59.8	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A87433
 Included Lab Sample IDs: 2037334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.0	78.4	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A87506
 Included Lab Sample IDs: 2037334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	87.2	84.4	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A87543
 Included Lab Sample IDs: 2037334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	105	P/P	50 - 150
Acetaminophen	111	117	P/P	60 - 160
Bentazon	109	119	P/P	50 - 160
Carbamazepine	127	126	P/P	60 - 160
Diuron	115	119	P/P	60 - 150
Fenuron	137	136	P/P	60 - 150
Fluridone	112	119	P/P	60 - 160
Hydrocodone	128	117	P/P	60 - 150
Ibuprofen	75.9	101	P/P	50 - 160
Imazapyr	109	105	P/P	50 - 150
Imidacloprid	127	118	P/P	60 - 160
Linuron	122	119	P/P	60 - 150
MCPP	99.7	101	P/P	50 - 150
Naproxen	126	101	P/P	50 - 160
Primidone	128	124	P/P	60 - 160
Pyraclostrobin	97.1	97.2	P/P	60 - 150
Triclopyr	99.8	105	P/P	50 - 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	88.5	142	130		8.59
	Acesulfame K	74.4	145	147		1.03
	Acetaminophen	112	115	111		3.62
	Bentazon	88.8	55.5	53.2		3.74
	Carbamazepine	86.0	79.4	77.7		2.09
	Diuron	80.3	59.7	59.0		0.966
	Fenuron	133	107	115		7.16
	Fluridone	91.2	89.0	87.5		1.37
	Hydrocodone	116	115	108		6.71
	Ibuprofen	90.8	72.5	76.5		5.35
	Imazapyr	103	111	109		1.08
	Imidacloprid	110	164	161		1.94
	Linuron	78.8	65.0	62.2		4.35
	MCPP	110	142	149		4.64
	Naproxen	105	94.8	93.5		1.40
	Primidone	110	98.0	99.6		1.64
	Pyraclostrobin	67.5	62.2	63.6		2.28
	Sucralose	91.9	97.7	104		5.93
	Triclopyr	116	135	134		1.01

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2037334

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/30/2018	10/31/2018 09:00	Hoor Shaik	11/05/2018 06:18	Juyoung Kim	2037334
	10/30/2018	10/31/2018 09:00	Hoor Shaik	11/06/2018 00:19	Juyoung Kim	2037334
	10/30/2018	10/31/2018 13:15	Rebecca Ware	11/01/2018 07:52	Rebecca Ware	2037334
	10/30/2018	10/31/2018 13:15	Rebecca Ware	11/03/2018 01:08	Mohammad Ghaffari	2037334