Chemical Analysis Report

SO-DIST-2018-11-30-02

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

Event Description: **Sarasota Gators**
Request ID: **RQ-2018-11-26-77**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Colin Wright, Program Administrator

Date Certified: 13-DEC-2018 11:51

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: HatchettCrk@PinebrookRd **Collection Date/Time: 11/29/2018 09:55**

Field ID: G3SD0103 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2045176	EPA 8321B	2,4-D	0.040		ug/L	P355375	
		Bentazon	0.024		ug/L	P355375	
		MCPP	0.0020	U	ug/L	P355375	
		Triclopyr**	0.0040	U	ug/L	P355375	
		Imidacloprid	0.0022	I	ug/L	P355375	MS
		Diuron	0.031		ug/L	P355375	
		Pyraclostrobin**	0.0020	U	ug/L	P355375	
		Primidone**	0.014	I	ug/L	P355375	
		Linuron	0.0040	U	ug/L	P355375	
		Acetaminophen**	0.0080	U	ug/L	P355375	
		Fenuron	0.029	I	ug/L	P355375	
		Imazapyr**	0.65		ug/L	P355375	
		Carbamazepine**	0.0017	I	ug/L	P355375	
		Fluridone**	0.055		ug/L	P355375	
		Hydrocodone**	8.0E-04	U	ug/L	P355375	
		Naproxen**	0.0080	U	ug/L	P355375	MS, RPD
		Ibuprofen**	0.020	U	ug/L	P355375	
		Sucralose**	0.64		ug/L	P355297	
		Acesulfame K**	0.14	I	ug/L	P355297	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355297

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

Reference Method: EPA 8321B
Batch ID: P355375

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P355297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.3		P	40 - 150
Acetaminophen	71.3		P	30 - 150
Bentazon	31.6		P	30 - 150
Carbamazepine	82.4		P	40 - 150
Diuron	67.0		P	40 - 150
Fenuron	99.4		P	40 - 150
Fluridone	96.9		P	40 - 150
Hydrocodone	96.2		P	40 - 150
Ibuprofen	59.7		P	40 - 150
Imazapyr	76.3		P	40 - 150
Imidacloprid	90.9		P	40 - 160
Linuron	70.9		P	40 - 150
MCPP	81.7		P	40 - 150
Naproxen	52.5		P	40 - 150
Primidone	70.9		P	40 - 150
Pyraclostrobin	60.9		P	40 - 150
Triclopyr	49.6		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044792	Acesulfame K	127	122	P/P	40 - 150
2044792	Sucralose	101	120	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044604	2,4-D	85.9	94.2	P/P	40 - 150
2044604	Acetaminophen	83.5	85.3	P/P	30 - 150
2044604	Bentazon	34.5	39.4	P/P	30 - 150
2044604	Carbamazepine	77.3	82.2	P/P	40 - 150
2044604	Diuron	59.1	64.3	P/P	40 - 150
2044604	Fenuron	87.4	89.5	P/P	40 - 150
2044604	Fluridone	97.0	104	P/P	40 - 150
2044604	Hydrocodone	113	117	P/P	40 - 150
2044604	Ibuprofen	60.7	67.9	P/P	40 - 150
2044604	Imazapyr	113	98.3	P/P	40 - 150
2044604	Imidacloprid	177	180	F/F	40 - 160
2044604	Linuron	65.1	65.6	P/P	40 - 150
2044604	MCPP	107	115	P/P	40 - 150
2044604	Naproxen	34.7	58.8	F/P	40 - 150
2044604	Primidone	85.8	87.1	P/P	40 - 150
2044604	Pyraclostrobin	60.6	60.2	P/P	40 - 150
2044604	Triclopyr	63.6	64.5	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P355297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044792	Acesulfame K	3.84	Spike	P	0 - 30
2044792	Sucralose	15.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044604	2,4-D	8.84	Spike	P	0 - 30
2044604	Acetaminophen	1.13	Spike	P	0 - 30
2044604	Bentazon	12.0	Spike	P	0 - 30
2044604	Carbamazepine	6.13	Spike	P	0 - 30
2044604	Diuron	6.61	Spike	P	0 - 30
2044604	Fenuron	2.34	Spike	P	0 - 30
2044604	Fluridone	6.65	Spike	P	0 - 30
2044604	Hydrocodone	3.32	Spike	P	0 - 30
2044604	Ibuprofen	11.2	Spike	P	0 - 30
2044604	Imazapyr	7.20	Spike	P	0 - 30
2044604	Imidacloprid	1.85	Spike	P	0 - 30
2044604	Linuron	0.692	Spike	P	0 - 30
2044604	MCPP	6.79	Spike	P	0 - 30
2044604	Naproxen	39.6	Spike	F	0 - 30
2044604	Primidone	1.54	Spike	P	0 - 30
2044604	Pyraclostrobin	0.548	Spike	P	0 - 30
2044604	Triclopyr	1.39	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: 2045176
Field Sample ID: G3SD0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.9	P	30 - 160
EPA 8321B	Diuron-d6	88.0	P	30 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Ibuprofen-d3	96.6	P	30 - 160
EPA 8321B	Primidone-d5	82.2	P	30 - 160
EPA 8321B	Sucralose-d6	86.7	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A88074
Included Lab Sample IDs: 2045176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	72.1	87.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A88081
Included Lab Sample IDs: 2045176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A88245
Included Lab Sample IDs: 2045176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.0	83.4	P/P	50 - 150
Acetaminophen	76.4	82.9	P/P	60 - 160
Bentazon	104	108	P/P	50 - 160
Carbamazepine	109	114	P/P	60 - 160
Diuron	107	104	P/P	60 - 150
Fenuron	93.9	92.1	P/P	60 - 150
Fluridone	106	104	P/P	60 - 160
Hydrocodone	93.2	90.7	P/P	60 - 150
Ibuprofen	79.0	74.1	P/P	50 - 160
Imazapyr	71.1	84.4	P/P	50 - 150
Imidacloprid	87.4	90.1	P/P	60 - 160
Linuron	92.0	107	P/P	60 - 150
MCPP	92.4	95.6	P/P	50 - 150
Naproxen	126	106	P/P	50 - 160
Primidone	84.3	95.6	P/P	60 - 160
Pyraclostrobin	104	97.5	P/P	60 - 150
Triclopyr	86.3	106	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		
					LCS	SMP	MS
EPA 8321B	2,4-D	60.3	85.9	94.2			8.84
	Acesulfame K	102	127	122			3.84
	Acetaminophen	71.3	83.5	85.3			1.13
	Bentazon	31.6	34.5	39.4			12.0
	Carbamazepine	82.4	77.3	82.2			6.13
	Diuron	67.0	59.1	64.3			6.61
	Fenuron	99.4	87.4	89.5			2.34
	Fluridone	96.9	97.0	104			6.65
	Hydrocodone	96.2	113	117			3.32
	Ibuprofen	59.7	60.7	67.9			11.2
	Imazapyr	76.3	113	98.3			7.20
	Imidacloprid	90.9	177	180			1.85
	Linuron	70.9	65.1	65.6			0.692
	MCPP	81.7	107	115			6.79
	Naproxen	52.5	34.7	58.8			39.6
	Primidone	70.9	85.8	87.1			1.54
	Pyraclostrobin	60.9	60.6	60.2			0.548
	Sucralose	109	101	120			15.1
	Triclopyr	49.6	63.6	64.5			1.39

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2045176

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/30/2018	11/30/2018 15:00	Rebecca Ware	11/30/2018 20:31	Rebecca Ware	2045176
	11/30/2018	11/30/2018 15:00	Rebecca Ware	12/01/2018 17:32	Mohammad Ghaffari	2045176
	11/30/2018	12/05/2018 10:00	Hoor Shaik	12/07/2018 07:40	Juyoung Kim	2045176